PACIFIC SALMON COMMISSION
JOINT CHINOOK
TECHNICAL COMMITTEE REPORT

2007 ANNUAL REPORT OF CATCHES AND ESCAPEMENTS, EXPLOITATION RATE ANALYSIS AND MODEL CALIBRATION

REPORT TCCHINOOK (08)-1

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LIST OF ACRONYMS WITH DEFINITIONS

AABM	Aggregate Abundance Based Management
AC	Allowable Catch
AI	Abundance Index
ADF&G	Alaska Department of Fish & Game
AEQ	Adult Equivalent
Agreement	June 30, 1999 PST Annex and the related Agreement
AUC	Area Under the Curve
AWG	Analytical Working Group of the CTC
BCAFC	British Columbia Aboriginal Fisheries Commission
BTR	Base Terminal Run
C&S	Ceremonial & Subsistence
CBC	Central British Columbia Fishing area – Kitimat to Cape Caution
CCMP	Comprehensive Chinook Management Plan
CDFO	Canadian Department of Fisheries & Oceans
CI	Confidence Interval
CNR	Chinook Non-retention
CR	Columbia River
CRITFC	Columbia River Intertribal Fish Commission
CRFMP	Columbia River Fishery Management Plan
CTC	Chinook Technical Committee
CUS	Columbia Upriver Spring Chinook stock
CWT	Coded Wire Tag
DIT	Double Index Tag
ESA	U S Endangered Species Act
Est+fw	Estuary Plus Fresh Water Area
FL	Fork Length
FMP	PFMC Framework Management Plan
FNC	First Nations Caucus
FOG	Fisheries Operational Guidelines
FR	Fraser River
GCG	Gene Conservation Group
GW	Gitwinksihlkw
GS	Strait of Georgia
HOR	Hatchery Origin Returns
IDFG	Idaho Department of Fish & Game
IDL	InterDam Loss
IM	Incidental Mortality
ISBM	Individual stock based management
ITQ	Individual Transferable Quota
LFR	Lower Fraser River
LGS	Lower Strait of Georgia
mar	Marine Area
mar+fw	Marine Plus Fresh Water Area
MOC	Mid Oregon Coast
MRP	Mark-Recovery Program
MSF	Mark-Selective Fishery
MSH	Maximum sustainable harvest
MSY	Maximum Sustainable Yield for a stock, in adult equivalents
MSY ER	Exploitation Rate sustainable at the escapement goal for a stock, in AEQs
NBC	Northern British Columbia Dixon Entrance to Kitimat including Queen Charlotte Islands
NA	Not Available
NBC	Northern British Columbia Dixon Entrance to Kitimat including Queen Charlotte Islands
NM	Nautical Mile
NMFS	National Marine Fisheries Service
NOC	Oregon Coastal North Migrating Stocks
NPS	North Puget Sound
NPS-S/F	North Puget Sound Summer/Fall Chinook stock
NR	Not Representative
NWIFC	Northwest Indian Fisheries Commission
ODFW	Oregon Department of Fish & Wildlife
PFMC	Pacific Fisheries Management Council
PS	Puget Sound
PSC	Pacific Salmon Commission
PSARC	Pacific Scientific Advice Review Committee
PSMFC	Pacific States Marine Fisheries Commission
PST	Pacific Salmon Treaty
QDNR	Quinault Department of Natural Resources, Division of fisheries
QIN	Quinault Nation
QCI	Queen Charlotte Islands
RER	Recovery Exploitation Rate
S_{MSY}	Escapement producing MSY
SEAK	Southeast Alaska Cape Suckling to Dixon Entrance
SG	Strait of Georgia
SPS	South Puget Sound
SSRAA	Southern Southeast Regional Aquaculture Association
SWVI	Southwest Vancouver Island
TAC	Technical Advisory Committee
TBR	Transboundary Rivers
TTC	Transboundary Technical Committee
UFR	Upper Fraser River
UGS	Upper Strait of Georgia
USCTC	U S members of the CTC
USFWS	U S Fish & Wildlife Service
UW	University of Washington
WA/OR	Ocean areas off Washington and Oregon North of Cape Falcon
WAC	Washington Coast (Grays Harbor northward)
WACO	Washington, Oregon, Columbia River Chinook stock group
WCVI	West Coast Vancouver Island excluding Area 20
WDFW	Washington Department of Fisheries and Wildlife

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EXECUTIVE SUMMARY

The June 30, 1999, Pacific Salmon Treaty (PST) Annexes and Related Agreements (Agreement) substantially changed the objectives and structure of the Pacific Salmon Commission's (PSC) Chinook salmon fisheries and assessment of Chinook salmon stocks. The Agreement replaced the previous ceiling and pass-through fisheries with Aggregate Abundance Based Management (AABM) and Individual Stock Based Management (ISBM) fisheries. It also assigned the Chinook Technical Committee (CTC) with a number of tasks related to implementation of the Agreement (Appendix to Annex IV, Chapter 3).

In this report, we provide a summary of 2006 fishery catches by region, available estimates of incidental mortality by fishery and limited commentary on fishery catches where needed. Landed catch is reported in the appendices for each geographic area covered under the PST. An assessment of escapement for stocks with CTC accepted goals is included, and escapement data thru 2006 are provided for all escapement indicator stocks. This report also contains the principal results of the annual exploitation rate assessment of CWT data through 2005 and the final preseason Chinook model calibration for 2007 (CLB 0705). Results include the Abundance Indices (AIs) for the AABM fisheries and ISBM indices for each party (country).

AABM ABUNDANCE INDICES AND ASSOCIATED CATCHES

The pre- and postseason AIs for the three AABM fisheries, Southeast Alaska All Gear (SEAK), Northern British Columbia Troll and Queen Charlotte Islands Sport (NBC), and West Coast Vancouver Island Troll and Outside Sport (WCVI) are presented in Table 1. The Agreement specifies that the AABM fisheries are to be managed through the use of the AIs. Each calibration provides the first postseason AIs for the previous year and the preseason AIs for the current year. Preseason AIs are used to set total allowable catch limits in the upcoming fishing season. Subsequently, postseason AIs (from the following year's calibration) are used to track catch overage and underage provisions. The first 2006 postseason AIs and the 2007 preseason AIs have now been finalized.

Table 1. Abundance Indices for 1999 to 2007 for the SEAK, NBC, and WCVI AABM fisheries.

	SEAK		NBC		WCVI	
Year	Preseason	Postseason	Preseason	Postseason	Preseason	Postseason
1999	1.15	1.12	1.12	0.97	0.60	0.50
2000	1.14	1.10	1.00	0.95	0.54	0.47
2001	1.14	1.29	1.02	1.22	0.66	0.68
2002	1.74	1.82	1.45	1.63	0.95	0.92
2003	1.79	2.17	1.48	1.90	0.85	1.10
2004	1.88	2.06	1.67	1.83	0.90	0.98
2005	2.05	1.90	1.69	1.65	0.88	0.84
2006	1.69	1.73	1.53	1.50	0.75	0.68
2007	1.60		1.35		0.67	

In general, the AIs for 1999 through 2001 are low compared to AIs in the late 1980s and early 1990s but values increased substantially starting in 2002. The 2007 projected AI values have declined when compared to the high values for 2004 through 2006. The Agreement specifies an allowable catch for each AI for each fishery. The maximum allowable Treaty catch (total catch minus any hatchery add-on and exclusion catch) by fishery and year and the actual (observed) catches are shown in Table 2.

Table 2. Observed catches and postseason allowable catches for 1999 to 2006, and preseason allowable catches for 1999 to 2007, for AABM fisheries.

PST Treaty Allowable and Observed Catches									
Year	SEAK (T, N, S) [1]			NBC (T, S)			WCVI (T, S)		
	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch
1999	192,800	184,200	198,842	145,600	126,100	86,726	128,300	107,000	36,413
2000	189,900	178,500	186,493	130,000	123,500	31,900	115,500	86,200	101,438
2001	189,900	250,300	186,919	132,600	158,900	43,500	141,200	145,500	117,670
2002	356,500	371,900	357,133	192,700	237,800	150,137	203,200	196,800	165,036
2003	366,100	439,600	380,152	197,100	277,200	191,657	181,800	268,900	175,821
2004	383,500	418,300	428,773 433,446 [2]	243,600	267,000	241,508	192,500	209,600	216,624
2005	416,400	387,400	391,507	246,600	240,700	243,606	188,200	179,700	202,662
2006	346,800	354,500	359,184	223,200	200,000	247,337	160,400	145,500	146,883
2007	329,400			178,000			143,300		

[1] Nomenclature is T for troll, N for net, and S for sport.

[2] The lower value resulted from subtracting a disputed terminal exclusion catch for the Stikine River in 2004. Catch accounting has since been defined in the Transboundary Agreement.

Table 3 shows the differences between the postseason allowable catches and the observed catches in AABM fisheries for 1999–2006, and the cumulative differential for those years. All three AABM fisheries have cumulative underages. In SEAK, observed catches have been below final allowable catches for three of the eight years; the cumulative differential is –3.7% or -3.5%. In NBC, observed catches have been below the final allowable catches in six of the eight years; the cumulative differential is –24.2%. In WCVI, observed catches have been below allowable catches in four of the eight years; the cumulative differential is –13.0%.

Table 3. Deviations in numbers of Chinook salmon and percentages from catch targets derived from the first postseason AI (Table 3.2) for Pacific Salmon Treaty AABM fisheries in 1999 to 2006.

Year	SEAK		NBC		WCVI	
	Number of Fish	Percent Difference	Number of Fish	Percent Difference	Number of Fish	Percent Difference
1999	+14,642	+7.9%	-39,374	-31.2%	-70,587	-66.0%
2000	+7,993	+4.5%	-91,600	-74.2%	+15,238	+17.7%
2001	-63,381	-25.3%	-115,400	-72.6%	-27,830	-19.1%
2002	-14,767	-4.0%	-87,663	-36.9%	-31,764	-16.1%
2003	-59,448	-13.5%	-85,543	-30.9%	-93,079	-34.6%
2004	+10,473 +15,146	+2.5% +3.6%	-25,492	-9.5%	+7,024	+3.35%
2005	+4,107	-0.2%	+2,906	+1.2%	+22,962	+12.8%
2006	+4,684	-1.1%	+47,337	+23.7%	+1,383	+0.95%
Cum.	-95,697 -91,024[1]	-3.7% -3.5%	-398,848	-24.2%	-174,339	-13.0%

[1] The lower value resulted from subtracting a disputed terminal exclusion catch for the Stikine River in 2004. Catch accounting has since been defined in the Transboundary Agreement.

ISBM INDICES

For ISBM fisheries, the Agreement specified that Canada and the United States would reduce base period exploitation rates on specified stocks by 36.5% and 40%, equivalent to ISBM indices of 63.5% and 60% percent, respectively. This requirement is contained in Chapter 3 section 4(d) of the treaty and is referred to as the 'general obligation' and does not apply to stock groups that achieve their CTC agreed escapement goals. Estimated ISBM fishery indices are shown in Table 4 for Canadian fisheries and Table 5 for United States (U.S.) fisheries. Both tables present CWT-based indices for 2005, and Chinook model-based indices for 2007. The agreement specifies that the ISBM indices be forecasted preseason and evaluated postseason for each escapement indicator stock listed in Attachments I to V of the Chinook Chapter.

CWT-based Indices in 2005

Five of the six Canadian ISBM indices from the CWT-based estimates for 2005 show that exploitation rates were reduced more than required for all stocks or stock groups for which the indices could be calculated. The exception was the ISBM index for WCVI Falls, which was 0.986 in 2005. Four of the 16 U.S. ISBM indices for the Coded Wire Tag (CWT) based estimates for 2005 were reduced more than required. Of the 12 U.S. CWT-based ISBM indices that exceeded 0.60, ten (Upriver Brights, Quillayute, Queets, Hoh, Lewis, Mid-Columbia Summers, Nehalem, Siletz, Siuslaw and Cowichan) have agreed escapement goals and all but the Cowichan stock exceeded their goals in 2005.

Table 4. Canadian 2005 ISBM indices based on CWT and the 2007 indices predicted from the PSC Chinook Model.

		Canadian ISBM Indices	
Stock Group	**Escapement Indicator Stock**	**CWT Indices for 2005**	**Model Indices for 2007**
Lower Strait of Georgia	Cowichan	0.132 [4]	0.240 [6]
	Nanaimo	NA [1,5]	
Fraser Late	Harrison River [2]	0.058 [7]	0.211
North Puget Sound Natural Springs	Nooksack	NA	0.563
	Skagit	NA	0.563
Upper Strait of Georgia	Klinaklini, Kakweikan, Wakeman, Kingcome, Nimpkish	0.028	0.146
Fraser Early (spring and summers)	Upper Fraser, Mid Fraser, Thompson	NA	0.159
West Coast Vancouver Island Falls	WCVI (Artlish, Burman, Kauok, Tahsis, Tashish, Marble)	0.986 [8]	0.133
Puget Sound Natural Summer / Falls	Skagit	NA	0.718
	Stillaguamish	0.057	0.821
	Snohomish	NA	0.736
	Lake Washington	NA	0.735 [9]
	Green River	0.085	0.752 [9]
North / Central B. C.	Yakoun, Nass, Skeena, Area 8	NA	0.202
Washington Coastal Fall Naturals [3]	Hoko, Grays Harbor, Queets [2], Hoh [2], Quillayute [2]	NA	0.194
Columbia River Falls [3]	Upriver Brights [2]	NA	0.129
	Deschutes	NA	0.129
	Lewis [2]	NA	0.030
Columbia R Summers [3]	Mid-Columbia Summers [2]	NA	0.119
Far North Migrating OR Coastal Falls [3]	Nehalem [2], Siletz [2], Siuslaw [2]	NA	0.078

[1] Not available (NA) because of insufficient data (lack of stock specific tag codes, base period CWT recoveries, etc).
[2] Stock or stock group with a CTC agreed escapement goal.
[3] Stock group listed in Annex 4, Chapter 3, Attachment V.
[4] An inconsistency was discovered between the approaches used to calculate the model-based and CWT-based indices. The former included harvest rates for terminal sport while the latter did not. Terminal sport harvest rates are now included in the calculation of both indices. Further review is yet required to determine whether the base period terminal sport harvest rates obtained from analyses of Big Qualicum CWT recoveries adequately represent impacts that would have occurred on Cowichan Chinook.
[5] Several problems have been identified in the approach previously used to calculate the CWT-based indices for Nanaimo Chinook. Until these problems are resolved, indices for this stock will not be reported.
[6] Although model-based indices were previously calculated separately for Cowichan and Nanaimo, these did not adequately represent impacts on either LGS stock because the model-based data represent an aggregate of the two stocks and methods do not currently exist to correctly disaggregate these data for calculation of the ISBM values. Until such methods are developed, a single index value only will be reported representing the aggregate.
[7] The terminal sport harvest rates for Chilliwack Hatchery Chinook, the indicator stock, were removed from the calculation for the Harrison River naturals because sport harvest has been essentially zero on the natural population.
[8] An inconsistency was discovered between the approaches to calculate the model- and CWT-based indices. The former included harvest rates for terminal sport, the latter did not. Terminal sport harvest rates are now included in both indices. A more extended review of the indices for WCVI Chinook will be carried out to determine whether they adequately represent impacts on the WCVI wild aggregate.
[9] For Canadian ISBM fisheries, the same distribution and Index value are used for Lake Washington and Green R.

Predicted ISBM Indices for 2007

Five of the 19 ISBM indices for Canada, based on outputs from calibration 0705, are predicted to be above the allowable value of 0.635 for Canadian ISBM fisheries in 2007 (Table 4). None of these stocks (Skagit, Stillaguamish, Snohomish, Lake Washington and Green River) have CTC agreed escapement goals. Nine of the 22 U.S. ISBM indices based on calibration 0705 are predicted to be above the allowable limit of 0.60 for U.S. ISBM fisheries in 2007 (Table 5). All nine have CTC agreed escapement goals: Queets, Hoh, Quillayute, Upriver Brights, Lewis, Mid-Columbia Summers, Nehalem, Siletz, and Siuslaw.

Table 5. U.S. 2005 ISBM indices based on CWT and the 2007 indices predicted from the PSC Chinook Model.

		U.S. ISBM Indices	
Stock Group	**Escapement Indicator Stock**	**CWT Indices for 2005**	**Model Indices for 2007**
Washington Coastal Fall Naturals	Hoko	NA [1]	0.401
	Grays Harbor	0.560	0.504
	Queets [2]	2.050	1.014
	Hoh [2]	1.030	1.111
	Quillayute [2]	1.030	0.883
Columbia River Falls	Upriver Brights [2]	1.780	0.726
	Deschutes	0.670	0.493
	Lewis [2]	0.980	1.466
Puget Sound Natural Summer / Falls	Skagit	NA	0.325
	Stillaguamish	0.220	0.152
	Snohomish	NA	0.138
	Lake Washington	NA	0.391
	Green R	0.170	0.278
Fraser Late	Harrison River [2]	0.240	0.563
Columbia R Summers	Mid-Columbia Summers [2]	6.080	0.943
Far North Migrating OR Coastal Falls	Nehalem [2]	2.000	2.183
	Siletz [2]	1.190	1.399
	Siuslaw [2]	1.630	1.241
North Puget Sound Natural Springs	Nooksack	NA	NA
	Skagit	NA	NA
Lower Strait of Georgia [3]	Cowichan,	10.230	0.288
	Nanaimo	10.230	0. 288
Upper Strait of Georgia [3]	Klinaklini, Kakweikan, Wakeman, Kingcome, Nimpkish	NA	NC [4]
Fraser Early (spring and summers) [3]	Upper Fraser, Mid Fraser, Thompson	NA	0.219
West Coast Vancouver Island Falls [3]	WCVI (Artlish, Burman, Kauok, Tahsis, Tashish, Marble)	NA	0.311
North / Central B. C. [3]	Yakoun, Nass, Skeena, Area 8	NA	NC

[1] Not available (NA) because of insufficient data (lack of stock specific tag codes, base period CWT recoveries, etc).
[2] Stock with a CTC agreed escapement goal.
[3] Stock group listed in Annex 4, Chapter 3, Attachment IV.
[4] NC means that the current model assumes the stock is not caught in U.S. ISBM fisheries.

ESCAPEMENTS THROUGH 2006

The escapements of 50 naturally spawning escapement indicator stocks/stock aggregates are reviewed annually. Biologically-based escapement goals have been accepted by the CTC for 24 of the 50 escapement indicator stocks/stock aggregates. For 12 of these, the agency escapement goal is defined as a range; for the remaining 12, the escapement goal is the point estimate of S_{MSY} (escapement producing maximum sustained yield). In 2006, escapements were within the goal range for seven stocks, above the range or S_{MSY} point estimate for 11 stocks, and below the goal for six stocks. Data for stocks without accepted goals are presented to illustrate trends in escapement. The CTC will continue to review escapement goals, as they are provided to the committee.

1 CHINOOK CATCH

The June 30, 1999, Pacific Salmon Treaty (PST) Annexes and Related Agreements (Agreement) substantially changed the objectives and structure of the Pacific Salmon Commission's (PSC) Chinook salmon fisheries. The Agreement eliminated the previous ceiling and pass-through fisheries and replaced them with Aggregate Abundance Based Management (AABM) and Individual Stock Based Management (ISBM) fisheries. Chinook catches for the AABM fisheries in 2006 are summarized in Tables 1.1-1.4. Historical catches for PSC Chinook fisheries are given in Appendices A.1-A.14.

Starting with the CTC (2004a) report, the Chinook Technical Committee included estimates of incidental mortalities associated with landed catch for each component of each AABM fishery and most ISBM fisheries (CTC 2004b). Limited commentary on both AABM and ISBM fisheries is also provided.

1.1 REVIEW OF AABM FISHERIES

AABM fisheries for Chinook are managed to achieve a target catch corresponding to a target exploitation rate index and each year's abundance index (AI) in Table 1 of the Agreement. AABM fisheries are mixed stock salmon fisheries that intercept and harvest migratory Chinook from many stocks. The AABM fisheries (Annex IV, Chapter 3, paragraph 2) are:

1) Southeast Alaska (SEAK) All Gear,
2) Northern BC (NBC) Troll and Queen Charlotte Islands (QCI) sport, and
3) West Coast Vancouver Island (WCVI) Troll and Outside Sport.

Catches for these three fisheries are reported in Table 1.1.

Table 1.1. Annual catches and hatchery add-ons for the AABM fisheries, in thousands of Chinook salmon. The Treaty catches do not include the add-on or exclusions (see Section 1.1.1 and Appendix A.1). Notation is T for Troll, N for Net and S for sport.

	SEAK (T, N, S)			NBC (T), QCI (S)		WCVI (T, S)	
	Treaty Catch		Hatchery	Treaty Catch		Treaty Catch	
Year	Limit[1]	Observed	Add-on	Limit[1]	Observed	Limit[1]	Observed
1999	184.2	198.8	47.7	126.1	86.7	107.0	36.4
2000	178.5	186.5	74.3	123.5	31.9	86.2	101.4
2001	250.3	186.9	77.3	158.9	43.5	145.5	117.7
2002	371.9	357.1	68.2	237.8	150.1	196.8	165.0
2003	439.6	380.2	57.2	197.1	191.7	268.9	175.8
2004	418.3	428.8/433.4[2]	72.0	267.0	241.5	209.6	216.6
2005	387.4	386.7	64.1	240.7	243.6	179.7	202.7
2006	354.5	359.2	50.1	200.0	247.3	145.5	146.9
2007	329.4			178.0		143.3	

[1] Allowable treaty catches correspond to the postseason AIs for 1999-2006.

[2] The value on the left does not account for a terminal exclusion for the Stikine River, whereas the value on the right includes such terminal exclusion catch.

1.1.1 Southeast Alaska Fisheries

The SEAK Chinook fishery has been managed to achieve the annual all gear PSC allowable catch through a plan established by the Alaska Board of Fisheries. Once the all gear allowable catch is determined from the preseason AI each spring, this plan establishes gear quotas for the troll, net, and sport fisheries. The allocation plan reserves 4.3% of the total PSC catch for purse seine, 2.9% for drift gillnet and 1,000 fish for combined set gillnet fisheries. After the net quotas are subtracted, 80% of the remainder is reserved for troll gear and 20% for the sport fishery. The sport fishery is managed in-season with bag-limits and other constraints. Regulatory history and maps for each SEAK fishery are detailed in CTC (2004b).

In addition, the SEAK fisheries were managed for:

1) An Alaskan hatchery add-on estimated from coded-wire-tag (CWT) sampling, minus 5,000 base-period Alaska hatchery harvest. As a risk adjustment to account for sampling error, the lower bound of the 90% confidence interval is used as the estimate of Alaska hatchery harvest.
2) An exclusion of Situk stock catch in District 108, and exclusions of wild Chinook originating from the Taku and Stikine Rivers.
3) Compliance with provisions established by the National Marine Fisheries Service in accordance with the United States (U.S.) Endangered Species Act (ESA).
4) Consistency with the provisions of the PST as required by the Salmon Fishery Management Plan of the North Pacific Fishery Management Council that was established by the U.S. Magnuson-Stevens Act.

The total harvest in SEAK in 2006 was lower than harvests from 2002 to 2005. The pre-season AI of 1.69 allowed an initial all-gear catch of 346,800 fish per the Agreement. The all gear harvest was 440,704, comprised of a treaty catch of 359,184, an add-on of 50,059, and excluded catch of 31,462 Chinook salmon. A breakdown by gear for total catch, Alaskan hatchery contributions and terminal exclusions is detailed in Table 1.2. Historical harvests for 1975-2006 for SEAK are in Appendix A.1.

Table 1.2. Harvest of Chinook salmon in SEAK by gear type in 2006.

Gear	Total Harvest	Alaskan Hatchery Harvest	Alaskan Hatchery Add-on	Catch Exclusion[1]	Treaty Catch
Troll					
Winter	48,992	3,993	3,289	0	45,633
Spring	37,936	10,487	8,803	1,270	27,864
Summer	195,457	6,204	5,110	0	190,347
Troll subtotal	282,315	20,685	17,201	1,270	263,844
Sport	85,794	17,976	15,673	221	70,121
Net					
Set Net	1,195	0	0	0	1,195
Driftnet	46,431	9,030	7,623	29,971	8,837
Seine	24,969	10,017	9,782	0	15,187
Net subtotal	72,595	19,046	17,405	29,971	25,219
Total	440,704	57,486	50,059	31,462	359,184

[1] Exclusion catch claimed in 2006 is for the harvest sharing arrangement on the Taku and Stikine Rivers. There was no catch exclusion claimed on the Situk in 2006 as the catch did not reach the base level.

1.1.2 British Columbia Fisheries

Under the 1999 PST Agreement, the AABM fishery was defined to include NBC troll catch in statistical areas 1-5 and QCI sport catch in statistical areas 1 and 2. The total AABM catch for NBC troll and QCI sport fisheries) in 2006 was 222,863 (Table 1.1). The WCVI AABM fishery includes the WCVI troll and the outside WCVI Chinook sport fishery (defined below). The total AABM landed catch (First Nations, troll, and outside tidal sport) in 2006 was 146,883 Chinook (Table 1.1).

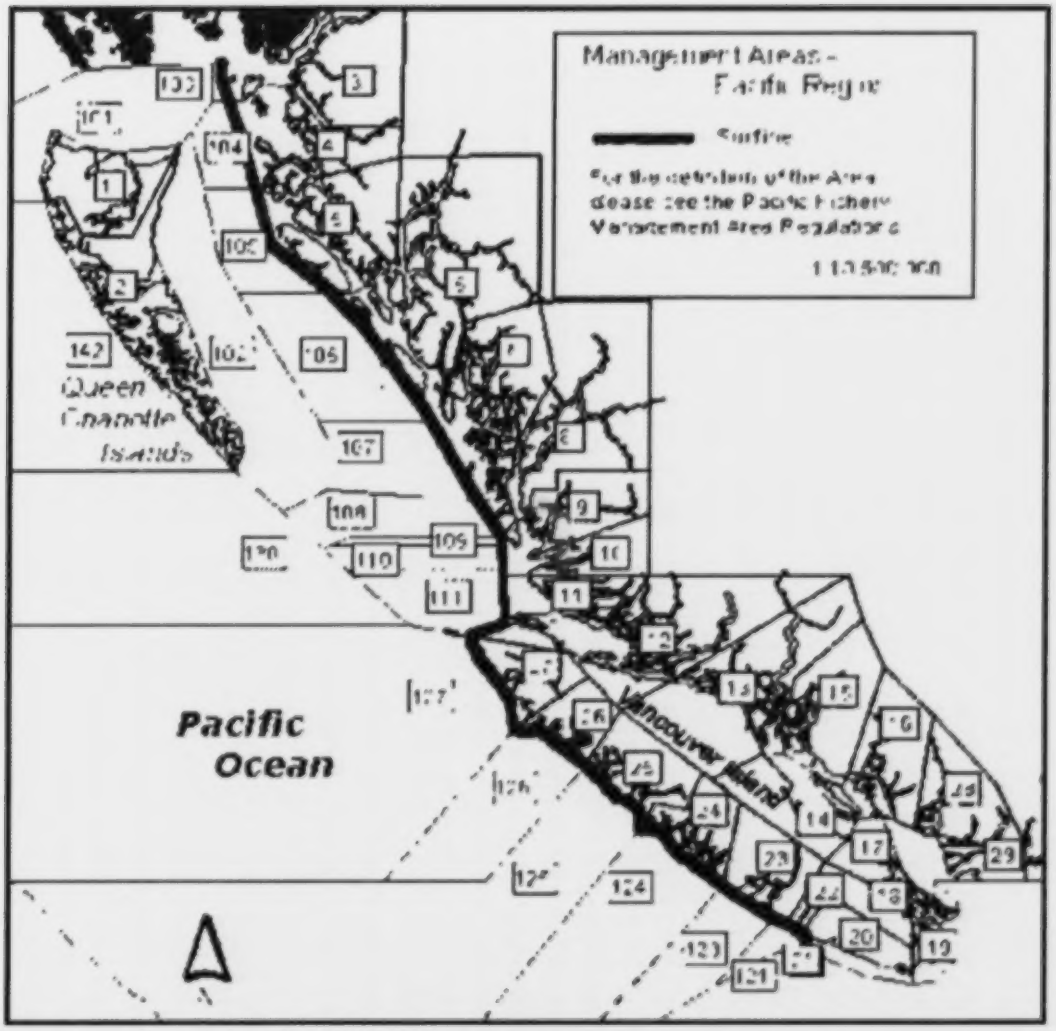


Figure 1.1. British Columbia fishery management areas.

1.1.2.1 NBC Troll Fishery Harvest

The NBC troll fishery landed 158,363 Chinook salmon in 2006. The fishery was open from October 1, 2005 to December 31, 2005 and from June 7 to September 30, 2006. Only 1 vessel participated in the October to December 2005 fishery and only 25 Chinook salmon were caught. A demonstration fishery was conducted again in 2006 to examine the application of individual transferable quotas (ITQ) in the troll fishery. The summer fishery accounted for a total of 158,338 Chinook salmon, with 153,214 fish caught under the ITQ system and 3,887 fish caught under the regular style or derby fishery. A test fishery was conducted in areas off the west coast of the Queen Charlotte Islands, accounting for the remaining 1,237 legal-sized Chinook salmon.

Prior to the 2006 season troll vessel operators were permitted to reselect fishing areas coast wide. The NBC troll fishery occurs in Area F and the area received an additional 80 vessels bringing the total number of licences in the area to 246. The influx of vessels was due to reduced fishing

opportunities in southern areas and the introduction of ITQs. There were 159 licensed vessels that participated in the ITQ fishery and 6 vessels that participated in the derby fishery.

The size limit for Chinook salmon caught in the NBC troll fishery was 67 cm. Barbless hooks and revival boxes were mandatory in the troll fishery. A ribbon boundary around Langara Island and from Skonun Point to Cape Knox on Graham Island excluded the commercial troll fishery from areas within one nautical mile of the shore for the full duration of the summer fishery, June 7 to September 30, 2006.

Table 1.3. Summary of landed catch by gear for Canadian AABM fisheries in 2006.

AABM Fishery	Troll	Sport	Total
NBC	158,363	64,500	222,863
WCVI	108,978	37,905	146,883

1.1.2.2 NBC and CBC Sport Fishery Harvest

Tidal recreational fisheries in NBC and CBC (marine statistical Areas 1-11; Figure 1.1) are managed under one set of regulations (45 cm minimum size limit; two Chinook per day and four in possession; annual bag limit of 30). During the past decade, recreational fisheries in the marine areas of NBC and CBC have expanded substantially. Management of these marine recreational fisheries now recognizes two basic regions: QCI, and the coastal mainland. Only the QCI recreational catch is included in the AABM totals. Since 1995, catch in the QCI recreational fisheries has been estimated by creel surveys (supported by the Haida Nation), lodge logbook programs and independent observations by CDFO staff. Catch for this fishery in 2006 was 64,500 Chinook salmon. Thus, the total NBC AABM catch (troll plus sport) between October 1, 2005 and September 30, 2006 was 222,863 Chinook salmon (Table 1.3).

1.1.2.3 West Coast Vancouver Island AABM

Under the 1999 PST Agreement, the WCVI AABM fishery includes the WCVI troll and the outside WCVI Chinook sport fishery (defined below). The total AABM landed catch (First Nations, troll, and outside tidal sport) in 2006 was 146,883 Chinook (Table 1.3).

1.1.2.3.1 WCVI Troll Fishery Harvest

The AABM troll catch includes the commercial Area G troll catch and First Nations troll caught Chinook in Statistical Areas 21, 23-27, and 121-127 (Figure 1.1). In the 2006 season (October 1, 2005-September 30, 2006), the WCVI troll fishing opportunities were consistent with a CDFO commitment to evaluate winter fisheries as a means to improve the economic base for the fleet and local communities while increasing flexibility in harvest opportunities and reducing the harvest rates on stocks encountered in summer fisheries (Table 1.4). Troll fishery openings were shaped by conservation concerns for early spring-run upper Fraser River, WCVI and Strait of Georgia (SG) Chinook and upper Fraser River and Thompson River coho.

To protect early spring-run upper Fraser and SG Chinook, SWVI areas 123-124 were closed from mid-March to mid-April. To protect Upper Fraser and Thompson River coho, coho non-retention remained in effect for the spring/summer period, coho encounter rates were monitored, and commercial fisheries were closed from late June until the end of August (with the exception of a limited exploratory plug fishery). To protect WCVI Chinook, summer fisheries were very limited, and September fisheries were conducted 5 nautical miles seaward of the surf line. To

protect SG Chinook, harvest levels were reduced during the spring period when recent impacts have been highest (determined through a review of Cowichan CWT recoveries): the April catch was reduced from 57,063 in 2005 to 20,561 in 2006, and the May catch was reduced from 26,655 in 2005 to 7,078 in 2006. This measure also provides some protection to spring run US Chinook stocks at the same time the mature cohort are abundant on the WCVI. Statistical Area 121 (the southern bank area) remained closed in 2006. Selective fishing practices were mandatory, including single barbless hooks and "revival tanks" for resuscitating coho salmon prior to release. Size limits for commercial troll remained unchanged in all periods for 2005/2006 at 55 cm (fork length). The majority of catch from November through March came from Areas 23, 123, 125 and 126. The majority of the catch in September came from Areas 123 and 125.

Table 1.4. Fishing periods and Chinook harvested and released during the 2006 accounting year in the WCVI commercial troll fishery.

Fishing Period	Areas Open	Area Predominately Fished	Landed Catch	Sub-legal releases
Oct 3-11/05	123-127	123	12,198	1,032
Nov 7-8/05	123-127	123	2,156	541
Dec 5-8/05	23/123-27/127	123	1,689	172
Jan 9-21/06	23/123-27/127	126	1,468	131
Feb 8-11/06	23/123-27/127	126	5,154	523
Mar 10-13, 16-31/06	23-27, 125-127	126	7,883	294
Apr 1-15/06	25-26, 125-127,	126	7,725	204
Apr 16-19/06	25-26, 124-127		166	3
Apr 20-30/06	23/123-27/127	123	12,670	420
May 1-5/06	23/123-27/127	123	7,078	343
Jun 9-10/06	123-127	123	411	10
Jun 15-18/06	123-127	123	16,955	1,146
Jun 19-22/06	125-127	127	3,441	110
Aug 25-31/06	125-127	125	886	10
Sep 3/06	125-127	126	2,590	193
Sep 7-13/06	125-127	125	9,996	974
Sep 14-16/06	123-127	123	8,765	1,026
Sep 17-30/06	125-127	126	2,747	179
TOTAL			**103,978**	**7,311**

Note: WCVI troll fisheries were closed late June to early-September to avoid encounters of Upper Fraser and Thompson River coho and WCVI Chinook, with the exception of a limited, experimental plug fishery in late August.

The catch for 2006 Area G troll fisheries between October 1, 2005 and September 30, 2006 was 103,978 Chinook (Table 1.4). An estimated 5,000 Chinook were caught in WCVI First Nations troll fisheries in 2006. Therefore, the total WCVI AABM troll catch for 2006 was 108,978 with 7,311 sublegal Chinook releases (not including releases from the WCVI First Nations troll fisheries, which are currently unknown).

1.1.2.3.2 WCVI Recreational Fishery Harvest

The AABM recreational fishery includes all catch in northwest WCVI (Areas 25–27, 125-127; Figure 1) between October 16 through June 30, and the catch outside one NM offshore from July 1 through October 15, plus all the catch in southwest WCVI (Areas 21–24) between October 16 through July 31, and outside one NM offshore from August 1 to October 15. Catch inside the surf line and outside the AABM periods specified above is included in ISBM fishery catch.

The outer WCVI sport fishery occurs primarily in the Barkley Sound, outer Clayoquot Sound, and Nootka Sound areas. The majority of fishing effort occurs from mid-July to September in NWVI and August through mid-September in the SWVI. Creel surveys are generally conducted from late May or early June to September 30. For the outside sport fishery the Chinook daily bag limit was two Chinook greater than 45 cm. Barbless hooks were mandatory.

Recreational effort in the AABM portion of the WCVI fishery was estimated at 36,157 boat trips in 2006. The 2006 WCVI AABM sport catch estimate during the creel period was 37,905 Chinook (Table 1.5). Catch rates were estimated from 15,347 interviews (18% of the estimated number of angling parties) at 19 landing sites from June 1 to September 30. No creel surveys occurred between the months of October and May, as effort is relatively low during this period. Catch for this period is estimated to be 1,300 fish in areas 23/123 and 24/124. This amount was added to the creel estimate to provide a total WCVI AABM sport catch estimate of 37,905.

Table 1.5. Outer WCVI AABM sport fishery catches of Chinook by statistical area in 2006 representing catch during the creel survey periods only.

Statistical areas						
21/121	**23/123**	**24/124**	**25/125**	**26/126**	**27/127**	**Total**
2,449	19,530	3,713	2,089	5,272	4,852	37,905

1.2 ESTIMATES OF INCIDENTAL MORTALITIES IN AABM FISHERIES

1.2.1 SEAK Fisheries

Estimates of incidental mortality (IM) in SEAK fisheries are shown in Table 1.6. Estimates were available for all SEAK fisheries through 2006, except for the sport fishery for which 2006 data have not yet been tabulated. The IM for the troll and sport fisheries were estimated from direct fishery observation programs. Estimates for the net fishery included IM for both seine and gillnet fisheries. For the seine fishery, estimates were based on regressions between landed catch in traditional fisheries and IM, from the 1985-1987 purse seine studies (CTC 2004c). For the gillnet fishery, drop-off mortality was estimated as a percentage of the landed catch using the regional-specific drop-off rate for SEAK (CTC 2004c).

Table 1.6. Estimated encounters and incidental mortality in SEAK troll, net and sport fisheries for 2003-2006. Mortality estimates of fish released in troll and sport fisheries include drop-off mortality. In the net fishery, 21"-28" fish from both retention and non-retention periods are included in the CNR numbers.

Panel A - Troll and Sport Fisheries

		Troll				Sport		
		Retention Fishery		CNR Fishery		Retention	Releases	
		Legal				Legal		
Year		Drop-off	Sublegal	Legal	Sublegal	Drop-off	Legal	Sublegal
2003	Encounters	NA[1]	39,821	34,262	19,703	NA[1]	25,518	57,006
2003	IM	2,646	10,473	7,503	5,182	2,497	4,057	9,064
2004	Encounters	NA[1]	18,161	71,834	34,980	NA[1]	43,148	63,991
2004	IM	2,837	4,776	15,732	9,200	3,150	6,861	10,175
2005	Encounters	NA[1]	31,660	49,430	24,346	NA[1]	28,002	77,034
2005	IM	2,707	8,327	10,825	6,403	3,034	4,452	12,248
2006	Encounters	NA[1]	24,447	36,684	29,671	NA[1]		
2006	IM	2,258	6,430	8,034	7,804	2,764		

Panel B - Net Fisheries and Total

		Net Fisheries				Total Incidental Mortality	
		Seine			Gillnet		
		Retention	CNR Fishery		Legal		
Year		< 21"	> 28"	21"-28"	Drop-off	Legal	Sublegal
2003	Encounters	1,107	16,081	53,188	NA[1]		
2003	IM	1,107	8,202	39,093	305	25,210	64,919
2004	Encounters	591	28,700	94,922	NA[1]		
2004	IM	591	14,637	69,767	488	43,705	94,509
2005	Encounters	663	13,255	43,841	NA[1]		
2005	IM	663	6,760	32,223	1,064	28,842	59,864
2006	Encounters	512	12,525	41,427	NA[1]		
2006	IM	512	6,388	30,449	952	20,396	45,195

[1] Drop-off mortality is computed from landed catch times a percentage that incorporates a gear-specific encounter ratio and release mortality rate.

1.2.2 British Columbia Fisheries

1.2.2.1 NBC Fisheries

Table 1.7 summarizes encounter and IM estimates for the NBC AABM fisheries from 2002 to 2006 by size class during retention and Chinook Non-retention (CNR) fishing periods. Encounters for the NBC troll fishery are based on phone-in hails. Encounters for the QCI sport fishery are based on creel survey and logbook programs. The table presents IM estimates using size specific rates from the CTC (1997). The estimated total mortality of Chinook salmon in the NBC AABM fisheries in 2006 was 239,047 nominal fish, including 222,863 fish in the landed catch (Table 1.3) and 16,184 fish from legal and sublegal IM (Table 1.7).

Table 1.7. Estimated encounters and incidental mortalities (nominal fish) in NBC AABM troll and sport fisheries for 2002-2006. Mortality estimates of fish released in troll and sport fisheries include drop-off mortality.

		Troll				Sport		Total Incidental Mortalities	
		Retention Fishery		CNR Fishery		Retention	Releases [2]		
Year		Legal & Sublegal Drop-off	Sublegal releases	Legal	Sublegal	Legal & Sublegal Drop-off	Legal	Legal	Sublegal
2002	Encounters	NA [1]	2,608	5,109	129	NA [1]	42,226		
	IM	1,752	618	1,032	31	3,250	8,107	14,098	692
2003	Encounters	NA [1]	1,721	11,798	148	NA [1]	47,549		
	IM	2,335	408	2,383	35	3,747	9,129	17,566	472
2004	Encounters	NA [1]	2,605	31,460	489	NA [1]	116,741		
	IM	2,848	617	6,355	116	5,106	22,414	36,511	725
2005	Encounters	NA [1]	1,009	20,414	118	NA [1]	60,987		
	IM	2,972	239	4,124	28	4,747	16,457	23,535	284
2006	Encounters	NA [1]	10,409	1,556	102	NA [1]	32,480		
	IM	2,692	2,467	314	24	4,451	6,236	13,693	2,491

[1] Drop-off mortality is computed from landed catch times a percentage that incorporates a gear-specific encounter ratio and release mortality rate.
[2] Releases are reported as 'mixed' sizes. However, since >90% of such releases are legal-sized, all reported releases were considered to be legal-sized for the purpose of estimating incidental mortality.

1.2.2.2 WCVI Fishery

The estimated total mortality of Chinook salmon in the WCVI AABM fisheries in 2006 was 155,817 nominal fish, including 146,883 fish in the landed catch and 8,934 fish from IM (Table 1.8). The estimated IM included 6,402 legal and 2,532 sublegal fish in nominal numbers of fish. The estimates for the commercial troll fisheries in 2006 are from direct fishery observations programs. Table 1.8 summarizes encounter and IM estimates for these fisheries by size class during retention. In 2006, there were no CNR fishing periods in the AABM fishery.

Table 1.8. Estimated encounters and incidental mortalities (nominal fish) in WCVI troll and sport AABM fisheries for 2004-2006. Mortality estimates of fish released in troll and sport fisheries include drop-off mortality.

		Troll				Sport			Total Incidental Mortalities	
		Retention Fishery		CNR Fishery		Retention	Releases			
		Legal				Legal				
Year		Drop-off	Sublegal	Legal	Sublegal	Drop-off	Legal	Sublegal	Legal	Sublegal
2004	Encounters	NA [1]	10,430	0	0	NA [1]	16,449	5,680		
	IM	2,786	2,461	0	0	2,723	2,023	1,091	7,532	3,510 [2]
2005	Encounters	NA [1]	10,878	0	0	NA [1]	19,319	4,571		
	IM	2,300	2,567	0	0	3,610	2,376	878	8,286	3,445
2006	Encounters	NA [1]	7,345	3,277	889	NA [1]	11,882	6,048		
	IM	1,664	1,608	662	180	2,615	1,461	744	6,402	2,532

[1] Legal drop-off mortality is computed from landed catch, incorporating both an encounter ratio and a mortality rate.
[2] Sublegal dropoffs are included with sublegal incidental release mortalities.

1.3 REVIEW OF ISBM FISHERIES

1.3.1 Canadian ISBM Fisheries

ISBM fisheries include all fisheries that harvest or release Chinook salmon in British Columbia under PST jurisdiction outside areas governed by AABM fisheries. In 2006, 251,317 Chinook were harvested in Canadian ISBM fisheries in British Columbia and Canadian sections of the Alsek, Taku and Stikine Transboundary rivers. Total estimated IM in the Canadian ISBM fisheries in 2006 was 28,896 legal and 3,133 sublegal sized Chinook. The distribution of the landed catches and estimated incidental mortalities in Canadian ISBM fisheries are presented in Table 1.9. Historical catches in Canadian fisheries may be found in Appendixes A2 through A7.

Table 1.9. Landed catch and incidental mortalities in Canadian ISBM fisheries for 2006.

Region	Gear Type	Landed Catch	Releases		Incidental Mortalities[1]		Total Nominal Mortality
			Legal	Sublegal	Legal[2]	Sublegal[3]	
Transboundary Rivers (Taku, Stikine, Alsek)	Gillnet	23,480	0	0	1,080	0	24,560
	Recreational	243	0	0	17	0	260
	FN	960	0	0	44	0	1,004
Regional Total		*24,683*	*0*	*0*	*1,141*	*0*	*25,824*
Northern BC[4]	Gillnet	11,383	1,552	NA	1,992	NA	13,375
	Seine	0	8,352	NA	6,013	NA	6,013
	Tyee Test Fishery	1,178	0	0	54	0	1,232
	Tidal Sport	NA	NA	NA	NA	NA	NA
	Non-tidal Sport	NA	NA	NA	NA	NA	NA
	FSC(Tidal & Non-tidal)	17,262	NA	NA	NA	NA	17,262
Regional Total		*29,823*	*9,904*	*0*	*8,059*	*0*	*37,882*
Central Coast[5]	Troll	0	738	48	149	11	160
	Gillnet	5,441	21	NA	270	NA	5,711
	Seine	0	1,370	NA	986	NA	986
	Tidal Sport	9,382	413	15	727	3	10,112
	Non-tidal Sport	870	NA	NA	60	NA	930
	FSC(Tidal & Non-tidal)	4,099	NA	NA	189	NA	4,288
Regional Total		*19,792*	*2,542*	*63*	*2,381*	*14*	*22,187*
WCVI terminal	Gillnet	18,177	217	0	1,041	0	19,218
	Seine	2,131	11	0	8	0	2,139
	Tidal Sport	41,380	4,269	5,014	3,675	963	46,018
	Non-tidal Sport	NA	NA	NA	NA	NA	NA
	FSC(Tidal & Non-tidal)	28,628	NA	NA	1,317	NA	29,945
Regional Total		*90,316*	*4,497*	*5,014*	*5,963*	*963*	*97,242*
Johnstone Strait	Troll	0	274	338	55	80	135
	Gillnet[1]	197	934	0	0	0	0
	Seine	47	4,370	0	3,146	NA	3,193
	Tidal Sport	7,238	365	4,161	570	799	7,807
	FSC(Tidal & Non-tidal)	200			9		209
Regional Total		*7,682*	*5,943*	*4,499*	*4,673*	*879*	*12,435*
Strait of Georgia	Troll	0	3	0	1	0	0
	Gillnet	0	3	0	3	0	3
	Seine	0	0	0	0	0	0
	Tidal Sport	12,181	495	4,234	936	813	13,929
	FSC (Tidal & Non-tidal)	NA	776	NA	147	NA	NA
Regional Total		*12,181*	*1,277*	*4,234*	*1,088*	*813*	*14, 081*
Juan de Fuca Strait	Gillnet	155	97	NA	70	NA	225
	Seine	0	704	0	507	0	507
	Tidal Sport	26,437	2,665	2,414	2,336	463	29, 237
	FSC (Tidal & Non-tidal)	NA	NA	NA	NA	NA	NA
Regional Total		*26,592*	*3,466*	*2,414*	*2,913*	*463*	*29,968*
Fraser River	Gillnet	3,372	61	NA	213	NA	3,585
	Sport (mainstem+tribs)	15,143	550	NA	1,150	NA	16,293
	FSC (Tidal & Non-tidal)	21,733	333	NA	1,315	NA	23,048
Regional Total		*40,248*	*944*	*NA*	*2,678*	*NA*	*42,926*
Grand Total		**251, 317**	**28,574**	**16,225**	**28,896**	**3,133**	**282,546**

[1] Includes drop-off and release mortalities in both retention and Chinook non-retention fisheries

[2] In Chinook non-retention fisheries, all releases were assumed to be legal size as the sizes were unknown If no release information is available, IM represents dropoff mortality only

[3] Minimum size limits for sport catch were 45 cm in Juan de Fuca Strait and 62 cm elsewhere

[4] Includes areas 1-5

[5] Includes areas 6-10

1.3.2 Southern U.S. Fisheries Harvest

Southern U.S. fisheries of interest to the PSC, generally those north of Cape Falcon, Oregon, are managed in accordance with legal obligations stemming from treaties between Indian tribes and the United States. In 1974, *U.S. v Washington* set forth sharing obligations to meet Treaty fishing rights in western Washington. Treaty rights of Columbia River tribes were defined by *U.S. v Oregon*, and the Columbia River Fisheries Management Plan was implemented in 1977. In reporting these fisheries, fishermen are termed "treaty" if they are fishing under the Native Treaty fishing rights and "non treaty" otherwise. As specified in the 1999 agreement, all southern U.S. fisheries are ISBM fisheries. Historical catches in these fisheries may be found in Appendices A.8 through A.14.

1.3.2.1 Strait of Juan de Fuca and the San Juan Islands

The preliminary estimate of the 2006 Chinook catch in Strait of Juan de Fuca tribal net fisheries directed at sockeye salmon is 957. The preliminary estimate of the 2006 Chinook catch in the San Juan Islands tribal net fishery directed at sockeye salmon is 5,133. Non-treaty landings totaled about 145 Chinook. The preliminary estimate of the 2006 Strait of Juan de Fuca treaty troll fishery is 920 Chinook through December. The catch estimate does not include catches from Area 4B during the May-September PFMC management period. These are included in the North of Cape Falcon troll summary. Historic catch estimates are provided in Appendices A.8 and A.9 for the Strait of Juan de Fuca and San Juan areas respectively.

1.3.2.2 Puget Sound

The preliminary estimate of the 2006 tribal and non-tribal net fishery harvests in Puget Sound marine areas is 69,546 Chinook, mostly taken in terminal areas where harvestable abundance was identified. Additional tribal net harvest occurred in freshwater fisheries with a preliminary estimate of 35,124, giving a total preliminary harvest of 104,670 for Puget Sound net harvest in 2006. Estimates of the sport catch in 2006 are not yet available. Historic catch tables for Puget Sound exclusive of the San Juan Islands are provided in Appendix A.10.

1.3.2.3 Washington Coast

Tribal commercial and ceremonial and subsistence fisheries harvested a total of 11,380 Chinook in north coastal rivers (Quinault, Queets, Hoh, and Quillayute) in 2006. An additional 2,356 Chinook were harvested by the Makah tribal fisheries in the Waatch and Sooes rivers.

Harvest in Grays Harbor includes catch from both the Humptulips and Chehalis rivers. The 2006 tribal net fisheries harvested an estimated 1,675 Chinook. Approximately 14,359 Chinook were harvested by non-Indian commercial net fisheries in Willapa Bay in 2006.

From Grays Harbor north, recreational fisheries were implemented based upon pre-season tribal-state agreements and were subject to in-season adjustment. Estimates of sport fishery catches for Washington coastal terminal fishing areas in 2006 are not available. Historic catch estimates for Washington Coastal inside fisheries are shown in Appendix A.11.

Ocean fisheries off the coasts of Washington and Oregon are managed under regulations recommended by the Pacific Fishery Management Council. The estimated catch of Chinook

salmon in commercial troll fisheries from Cape Falcon to the U.S.-Canada border in 2006 was 57,288 for both treaty and non-treaty fisheries combined. Estimated catch in the ocean recreational fishery north of Cape Falcon in 2006 was 11,176 Chinook. Historic catch estimates for U.S. ocean fisheries north of Cape Falcon are shown in Appendix A.12.

1.3.2.4 Columbia River

Chinook from the Columbia River are divided into eight stock groups for management purposes. These groups are delineated by run timing and area of origin: (1) spring run originating below Bonneville Dam; (2) spring run originating above Bonneville Dam; (3) summer run originating above Bonneville Dam; (4) fall run returning to Spring Creek Hatchery; (5) fall run originating in hatchery complexes below Bonneville Dam; (6) wild fall run originating below Bonneville Dam; (7) upriver bright fall run; and (8) mid-Columbia bright fall hatchery fish.

In 2006, the total annual harvest for all fisheries (spring, summer and fall) in the Columbia River basin was 201,106 Chinook, which included non-Indian and treaty-Indian commercial net harvest of 157,029 and recreational harvest of 44,077. Historic catch estimates for Columbia River fisheries are found in Appendix A.13.

1.3.2.5 Ocean Fisheries, Cape Falcon to Humbug Mountain

Most harvest in ocean fisheries off Oregon's coast is comprised of a mixture of southern Chinook stocks not included in the PSC agreement. These stocks do not migrate north into the PSC jurisdiction to any great extent. Some stocks originating from Oregon coastal streams do migrate into PSC fisheries, including the North Oregon Coastal (NOC) and Mid-Oregon Coastal (MOC) stock aggregates. The NOC stocks are harvested only incidentally in Oregon ocean fisheries, while the contribution of MOC stocks to Oregon ocean fisheries is believed to be much greater. Catch statistics are readily available only for a terminal area troll fishery on one MOC stock at the mouth of the Elk River. Late season (October-December) troll catch in the Elk River terminal troll fishery in 2006 was 1,884 Chinook.

Recreational catch of these two stock groups occurs primarily in estuary and freshwater areas as mature fish return to spawn and is reported through a "punch card" accounting system. These data are only available more than two years after the current season. Therefore, we can only report the riverine and estuarine sport catch though 2004 for the NOC and MOC groups. The 2004 punch card estimate of estuary and freshwater catch for the NOC and MOC groups is 71,726 Chinook. Historic catch estimates for the Elk River troll fishery and the estuary and freshwater sport fisheries targeting on MOC and NOC stocks are shown in Appendix A.14.

1.4 ESTIMATES OF INCIDENTAL MORTALITY FOR SOUTHERN U.S. FISHERIES

Table 1.10 shows estimates of incidental mortalities for Washington Coastal and Puget Sound fisheries. Sources of estimates are shown in the table footnotes. No estimates of incidental mortalities were provided for 2006 for ocean fishery south of Cape Falcon or Columbia River fisheries.

Table 1.10. Estimated incidental mortality in Southern US troll, net, and sport fisheries for 2006.

Fishery	Troll	Net[1]	Sport
Strait of Juan de Fuca	252[2]	28	3,699
San Juan Islands	0	41	1,460
Puget Sound	0	487	17,642
Washington Coast	0	46	NA
North of Cape Falcon	15,900[3]	0	1,500[3]

[1] Assumes a 3% net dropout rate
[2] Estimates from FRAM
[3] Estimates from direct observations

2 ESCAPEMENTS THROUGH 2006

2.1 INTRODUCTION

The Agreement (Pacific Salmon Treaty Fishing Annexes & Related Agreements, June 30, 1999) established a Chinook management program that:

"introduces harvest regimes that are based on estimates of Chinook abundance, that are responsive to changes in Chinook production, that take into account all fishery induced mortalities and that are designed to meet MSY or other agreed biologically-based escapement objectives"

This chapter compares annual escapement estimates with maximum sustained yield (MSY) or other accepted biologically-based escapement goals established for Chinook stocks. The CTC has reviewed and accepted escapement goals for 24 stocks included in this report. For these stocks, the CTC can evaluate stock status in relation to the accepted goals. For stocks without accepted goals, the CTC must rely on the time series of escapement data and the agency commentary for the individual stocks to provide a perspective on stock status and escapement trends.

This year the CTC is presenting this information in an abbreviated format. Annual reports prior to 2006 included a section on the framework used for escapement assessments and for each stock, narratives were included that had a description of escapement methodology, escapement goal basis and agency comments. This report uses the same format as the 2006 report with commentary that replaced the narratives. For a detailed description of the framework used for escapement assessment and stock narratives, please refer to the 2004 Catch and Escapement Report (CTC 2005a).

2.1.1 MSY or Biologically-Based Escapement Goals

2.1.1.1 Origin of Goals

Escapement goals accepted by the CTC were based on analyses that followed the guidelines developed in the CTC escapement goal report (CTC 1999). In the stock-specific narratives presented with the escapement graphs, the agencies may refer to agency goals, but only CTC-accepted escapement goals and ranges (in gray shading) are shown on the escapement graphs and used for evaluation. Table 2-1 presents the status of escapement goal reviews by the CTC for stocks that have been identified as escapement indicator stocks.

Table 2.1. PSC Chinook escapement indicator stocks, where shading indicates that there is not a CTC accepted escapement goal for PSC assessment of stock status.

Presence in Treaty Attachments					Stock Group In Att. I-V	Escapement Indicator	Region	Run
SEAK	NBC/ QCI	WCVI	BC ISBM	SUS ISBM				
✔						Situk	Yakutat	Spring
✔						Alsek	Yakutat	Spring
✔						Taku	TBR	Spring
✔						Stikine	TBR	Spring
✔						Chilkat	N Inside	Spring
✔						King Salmon	N Inside	Spring
✔						Andrew Creek	C Inside	Spring
✔						Unuk	S Inside	Spring
✔						Chickamin	S Inside	Spring
✔						Blossom	S Inside	Spring
✔						Keta	S Inside	Spring
✔	✔		✔		Northern/Central B.C.	Yakoun	NBC-Area 1	Summer
✔	✔		✔		Northern/Central B.C	Nass	NBC-Area 3	Spring/Summer
✔	✔		✔		Northern/Central B.C	Skeena	NBC-Area 4	Spring/Summer
			✔		Northern/Central B C.	Dean	CBC-Area 8	Spring
						Rivers Inlet	CBC-Area 9	Spring/Summer
✔	✔		✔		WCVI Falls	Artlish, Burman, Kaouk, Tahsis, Tashish, Marble	WCVI	Fall
✔	✔		✔		Upper Strait of Georgia	Klinaklini , Kakwiekan, Wakeman, Kingcome, Nimpkish	UGS	Sum/Fall
			✔		Lower Strait of Georgia	Cowichan/Nanaimo[2]	LGS	Fall
✔	✔		✔		Fraser Early[1] (Spr/Sum)	Fraser Spring 1 3	Fraser River	Spring
✔	✔		✔		Fraser Early[1] (Spr/Sum)	Fraser Spring 1.2	Fraser River	Spring
✔	✔		✔		Fraser Early[1] (Spr/Sum)	Fraser Summer 1 3	Fraser River	Summer
✔	✔		✔		Fraser Early[1] (Spr/Sum)	Fraser Summer 0.3	Fraser River	Summer
		✔	✔	✔	Fraser Late	Harrison	Fraser River	Fall
			✔	✔	N P S Natural Springs	Nooksack	NC/PS	Spring
			✔	✔	N. P.S. Natural Springs	Skagit Spring	NC/PS	Spring
		✔	✔	✔	P S. Natural Summer/Falls	Skagit Summer/Fall	NC/PS	Summer/Fall
		✔	✔	✔	P S. Natural Summer/Falls	Stillaguamish	NC/PS	Summer/Fall
		✔	✔	✔	P S Natural Summer/Falls	Snohomish	NC/PS	Summer/Fall
		✔	✔	✔	P S. Natural Summer/Falls	Lake Washington	NC/PS	Summer/Fall
		✔	✔	✔	P S. Natural Summer/Falls	Green	NC/PS	Summer/Fall

-continued-

Table 2.1. Continued.

Presence in Treaty Attachments					Stock Group In Att. I-V	Escapement Indicator	Region	Run
SEAK	NBC/ QCI	WCVI	BC ISBM	SUS ISBM				
✔	✔			✔	WA Coastal Fall Natural	Hoko	WAC/JDF	Fall
						Quillayute Summer	WAC/JDF	Summer
✔	✔			✔	WA Coastal Fall Natural	Quillayute Fall	WAC/JDF	Fall
						Hoh Spring/Summer	WAC/JDF	Summer
✔	✔			✔	WA Coastal Fall Natural	Hoh Fall	WAC/JDF	Fall
						Quoots Spring/Summer	WAC/JDF	Summer
✔	✔			✔	WA Coastal Fall Natural	Quoots Fall	WAC/JDF	Fall
						Grays Harbor Spring	WAC/JDF	Spring
✔	✔			✔	WA Coastal Fall Natural	Grays Harbor Fall	WAC/JDF	Fall
						Col. Upriver Spring	CR	Spring
✔	✔	✔		✔	Col Upriver Summers	Mid-Columbia Summers	CR	Summer
✔	✔	✔		✔	Columbia River Falls	Col Upriver Bright	CR	Fall
✔	✔	✔		✔	Columbia River Falls	Lewis	CR	Fall
✔	✔	✔		✔	Columbia River Falls	Deschutes	CR	Fall
✔	✔			✔	Far N Migrating OR Coast	Nehalem	NOC	Fall
✔	✔			✔	Far N Migrating OR Coast	Siletz	NOC	Fall
✔	✔			✔	Far N Migrating OR Coast	Siuslaw	NOC	Fall
						South Umpqua	MOC	Fall
						Coquille	MOC	Fall

[1] The escapement indicator stocks listed in the Annex tables for this group are Upper Fraser, Middle Fraser, and Thompson. The Fraser spring/summer group is split into these 4 escapement indicators to represent the stock group by life history type rather than geographically

[2] An escapement goal was established for the Cowichan in 2005, a goal for Nanaimo is still pending

2.2 ESCAPEMENT ASSESSMENT

The Agreement directs the CTC to "report annually on the escapement of naturally spawning Chinook stocks in relation to the agreed escapement objectives referred to below, evaluate trends in the status of stocks, and report on progress in rebuilding of naturally spawning Chinook stocks" (Annex IV, Chapter 3, paragraph 1.b.iii). In this report, escapement assessments include stock specific graphs of escapements and commentary, presented to provide a perspective on stock status and escapement trends through 2006. More detailed commentary for each stock can be found in previous CTC catch and escapement reports, e.g. CTC (2005).

The escapement goals and 2006 escapements for the 24 stocks with CTC accepted escapement goals are listed in Table 2-2. For 12 of these stocks, the agency escapement goal is defined as a range; for the remaining 12 stocks, the escapement goal is defined as a point estimate. In 2006, escapements were within the goal range for seven stocks, above the range or S_{MSY} point estimate for 11 stocks, and below the goal for three stocks.

Table 2.2. Escapement goals and 2006 escapements for PSC Chinook escapement indicator stocks with biologically-based goals accepted by the CTC.

Stock	Region	Stock Group	Escapement Goal	2006 Escapement
Situk	SEAK	Yakutat	500-1,000	749
Alsek (Klukshu index)	SEAK/TBR	Yakutat	1,100-2,300	561
Chilkat	SEAK	Northern Inside	1,750-3,500	3,027
Taku	SEAK/TBR	TBR	30,000-55,000	39,632
Stikine	SEAK/TBR	TBR	14,000-28,000	20,600
King Salmon	SEAK	Northern Inside	120-240	149
Andrew Creek	SEAK	Central Inside	650-1,500	2,178
Unuk (survey index)	SEAK	Southern Inside	650-1,400	679
Chickamin (survey index)	SEAK	Southern Inside	450-900	1,330
Blossom (survey index)	SEAK	Southern Inside	250-500	339
Keta (survey index)	SEAK	Southern Inside	250-500	747
Harrison	BC	Fraser River	75,100-98,500	50,942
Cowichan	BC	LGS	6,500	1,069
Mid Col. Upr. Summer	CR	Columbia River	17,857	60,266
Col. Upriver Brights	CR	Columbia River	40,000	76,898
Lewis	CR	Columbia River	5,700	11,999
Quillayute Fall	WAC	WA Coast	3,000	5,970
Queets Spring/Summer	WAC	WA Coast	700	330
Queets Fall	WAC	WA Coast	2,500	2,338
Hoh Spring/Summer	WAC	WA Coast	900	904
Hoh Fall	WAC	WA Coast	1,200	1,632
Nehalem	ORC	NOC	6,989	4,711
Siletz	ORC	NOC	2,944	4,108
Siuslaw	ORC	NOC	12,925	28,082

The CTC has now assessed the status of stocks with CTC-accepted goals for return years 1999-2006. Over this time period, the number of stocks with CTC-accepted goals has increased from 16 to 24 (Figure 2.1). The percentage of stocks below escapement goals or goal ranges has varied over these years from 4% to 25%, and was 25% for 2006 escapements.

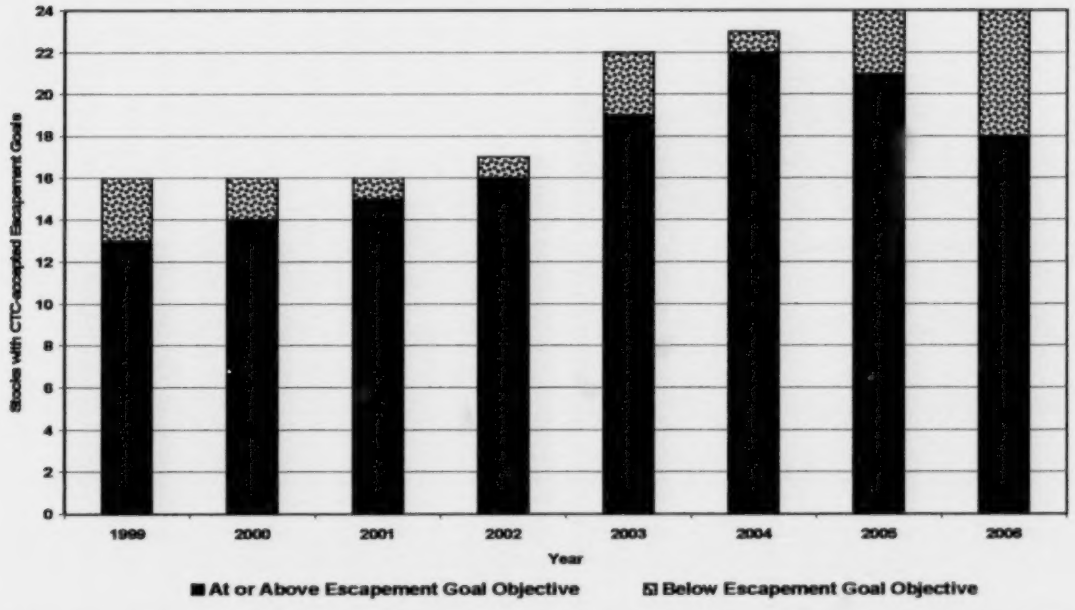


Figure 2.1. Number and status of stocks with CTC-accepted escapement goals for years 1999-2006.

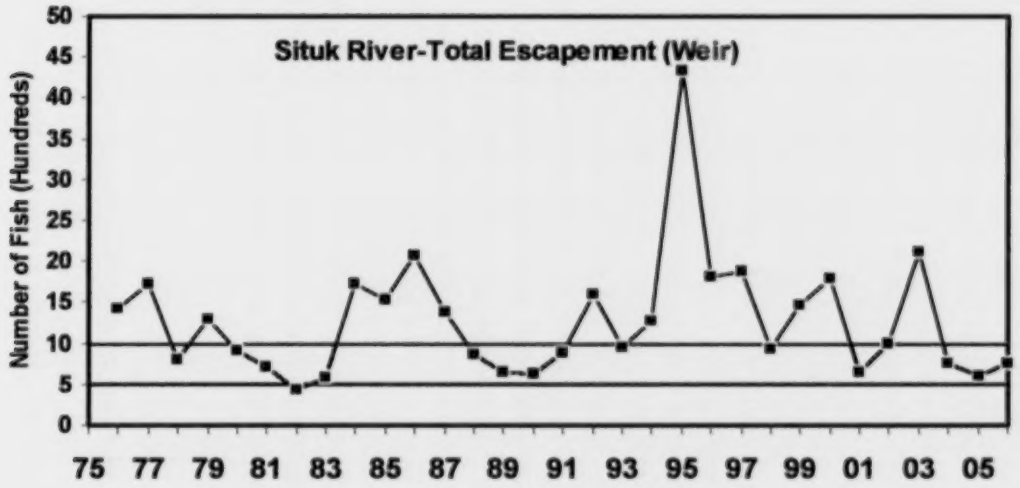
2.3 STOCK SPECIFIC GRAPHS AND COMMENTARIES

Graphs of time series of escapements and terminal runs for Chinook stocks are included in sections for Alaska, Canada, and Washington/Columbia River/Oregon. A limited commentary is also provided for each stock; more detail on historical assessments and escapement goals for individual stocks in available in CTC (2005a). Each graph contains the name of the stock and the type of data depicted (total escapement, index counts, terminal runs, etc.). For the graphs that include estimates of the terminal run size, the harvests in terminal runs include both jacks and adults in some cases, whereas the escapement is usually reported in adults. The *x*-axis represents calendar years. All escapement goals accepted by the CTC are shown except for the LGS stock group because this group includes both the Cowichan and Nanaimo stocks and only the Cowichan has a CTC accepted goal. Historical escapement and terminal run data are provided for SEAK stocks in Appendix B.1, for Canadian stocks in Appendix B.2, for Puget Sound in Appendix B.3, Washington Coastal stocks in Appendix B.4, for Columbia River stocks in Appendix B.5 and Oregon Coastal stocks in Appendix B.6.

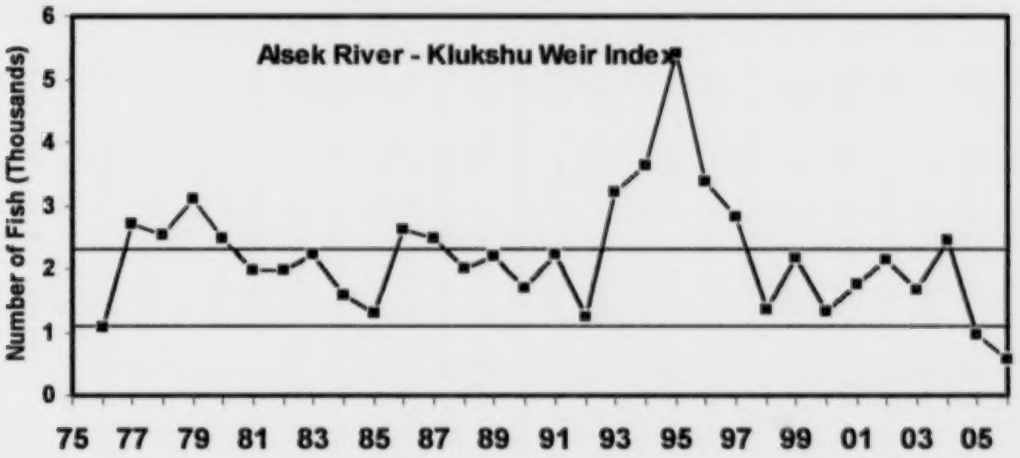
2.3.1 SEAK/TBR Stocks

Of the 11 SEAK/TBR stocks included in the escapement assessment, the Situk, Chilkat, Taku, King Salmon, and Stikine rivers and Andrew Creek include estimates of total escapement of large fish, Chinook salmon > 659 mm mid-eye to fork (MEF) length. Escapement estimates for the Alsek, Unuk, Chickamin, Blossom, and Keta rivers are index counts of large fish. These indices are enumerated from a weir on the Alsek River and foot/aerial helicopter surveys on the

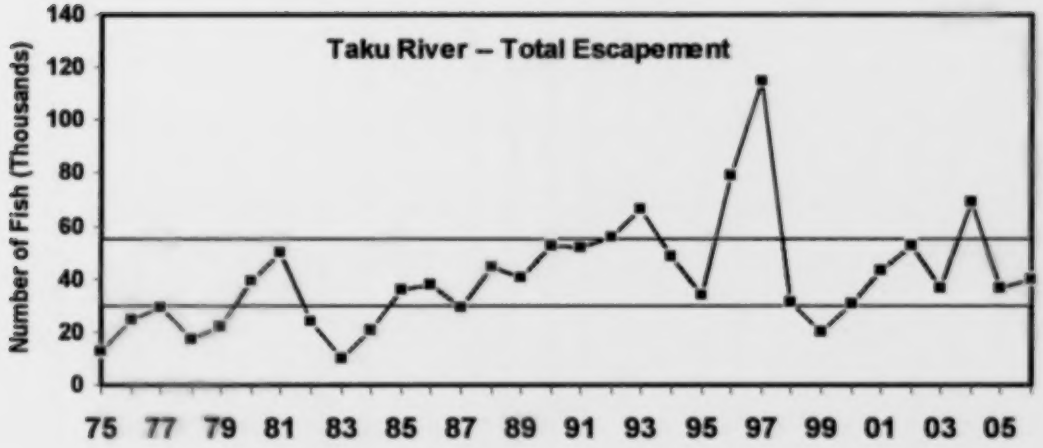
other four rivers that represent a fraction of the total escapement. Except for the Chilkat River, survey methods have been standardized for all systems since 1975. The assessment of Chilkat River Chinook salmon was standardized in 1991 as an annual mark-recapture estimate of escapement. Escapement goals have been defined as a range for the SEAK/TBR stocks, shown by the grey shaded area on the graphs.



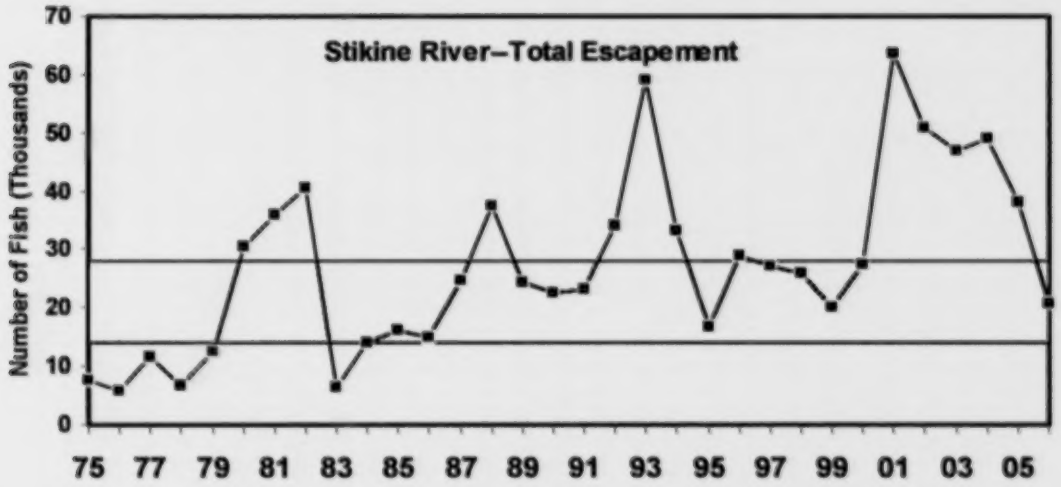
Commentary The Situk River is a small non-glacial system that supports a moderate run of outside-rearing Chinook salmon. Escapements are based on weir counts minus upstream sport fishery harvests (if any) estimated from an on-site creel survey and a postseason mail-out survey. The weir has been operated annually since 1976, and was also operated from 1928-1955.



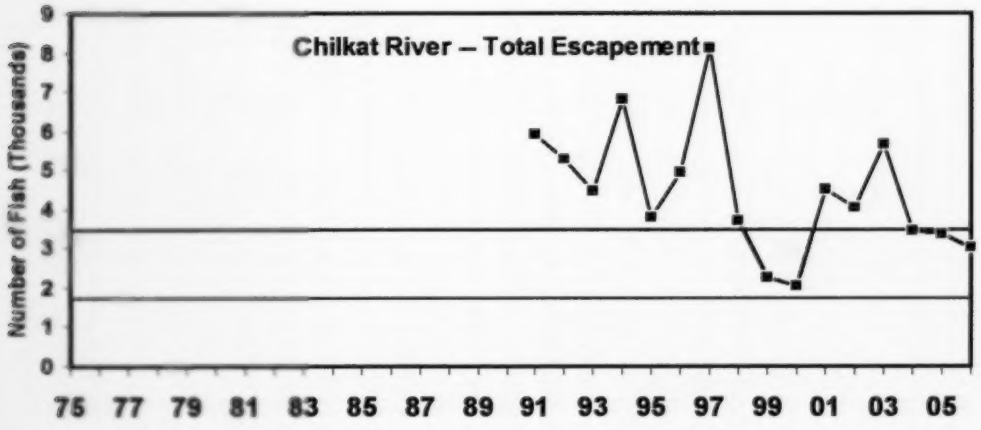
Commentary: The Alsek River is large transboundary glacial system that supports a moderate run of outside-rearing Chinook salmon. Since 1976 index escapements (shown above) have been determined using a weir operated at the Klukshu River.



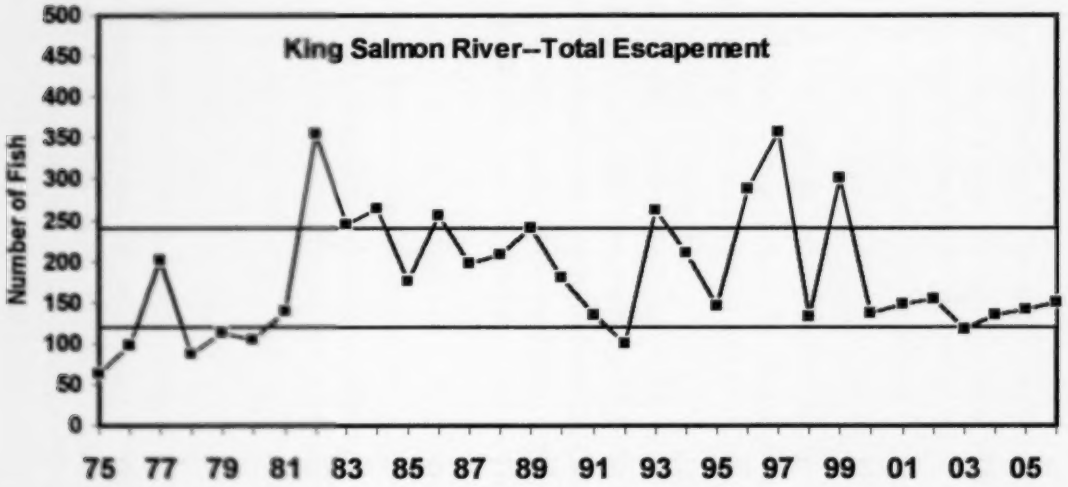
Commentary: The Taku River is a large transboundary glacial system that supports a large run of outside-rearing Chinook salmon. In 1989, 1990, and 1995-2006 escapements were determined using mark-recapture methods. In other years since 1975, aerial counts were expanded by a factor of 5.2, the 5-year average of the ratio of the mark-recapture estimates to aerial survey counts (McPherson et al. 2000).



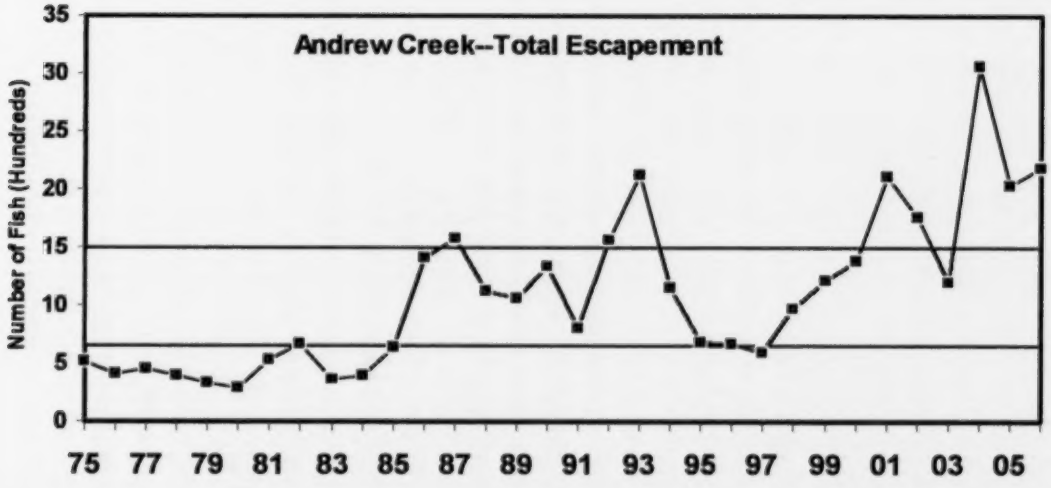
Commentary: The Stikine River is a large transboundary glacial system that supports a large run of outside-rearing Chinook salmon. From 1975 through 1984 index escapements were made using survey counts and since 1985 counts were made using a weir at the Little Tahltan River. Since 1996 mark-recapture experiments were performed indicating the index escapements represented 17% to 20% of the total escapement (Pahlke and Etherton 1999).



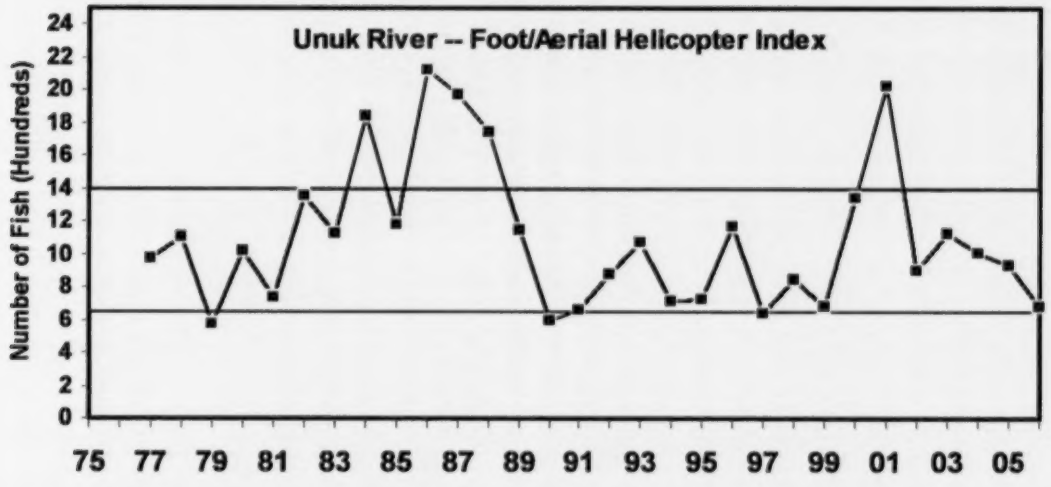
Commentary: The Chilkat River is a moderate-sized glacial system moderate run of inside-rearing Chinook salmon. Since 1991, escapements have been estimated using mark-recapture methods (Ericksen and McPherson 2003). The current biological escapement goal of 1,750 to 3,500 was formally accepted by the CTC in 2005.



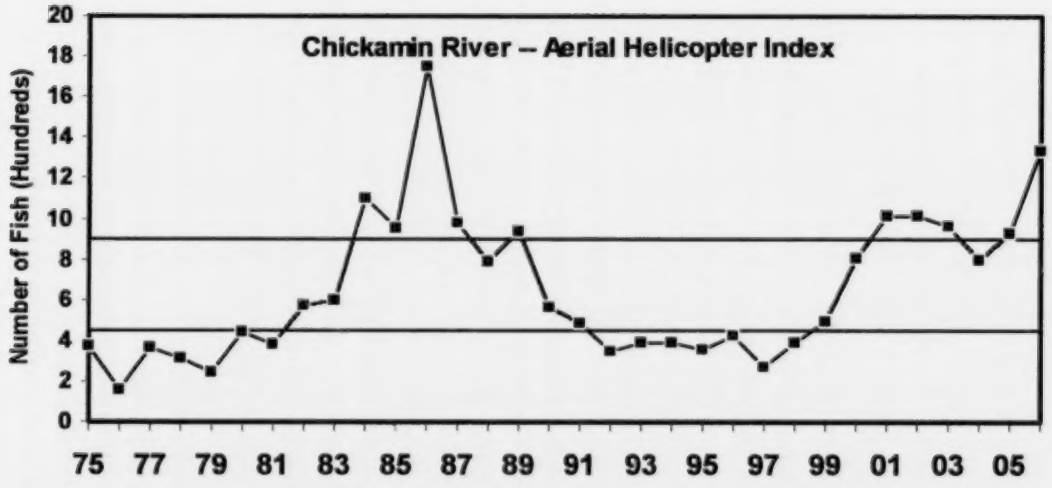
Commentary: The King Salmon River is a small non-glacial system that supports a small run of inside-rearing Chinook salmon. Escapements are based upon weir counts from 1983 to 1992 and expansions of index counts from 1971 to 1982 and 1993 to 2006. The 10 years of weir data showed that on average the escapement was 1.5 times the index count (McPherson and Clark 2001).



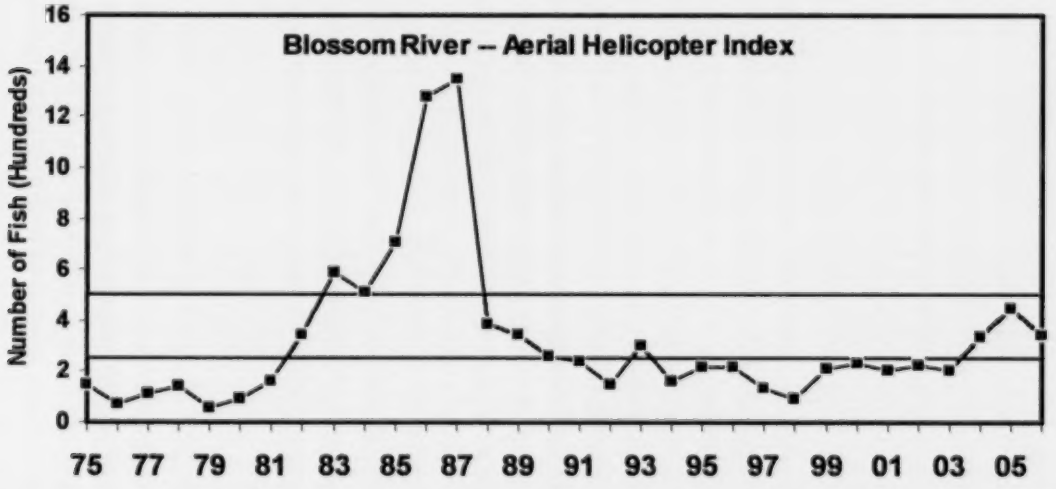
Commentary: Andrew Creek, a tributary of the lower Stikine River, is a small non-glacial system that supports a moderate run of inside-rearing Chinook salmon. Escapements are based upon weir counts from 1976 to 1984 and expansions of index counts in 1975 and 1985 to 2006. Four years of concurrent weir and index count data were used to estimate the expansion factor of 2.0.



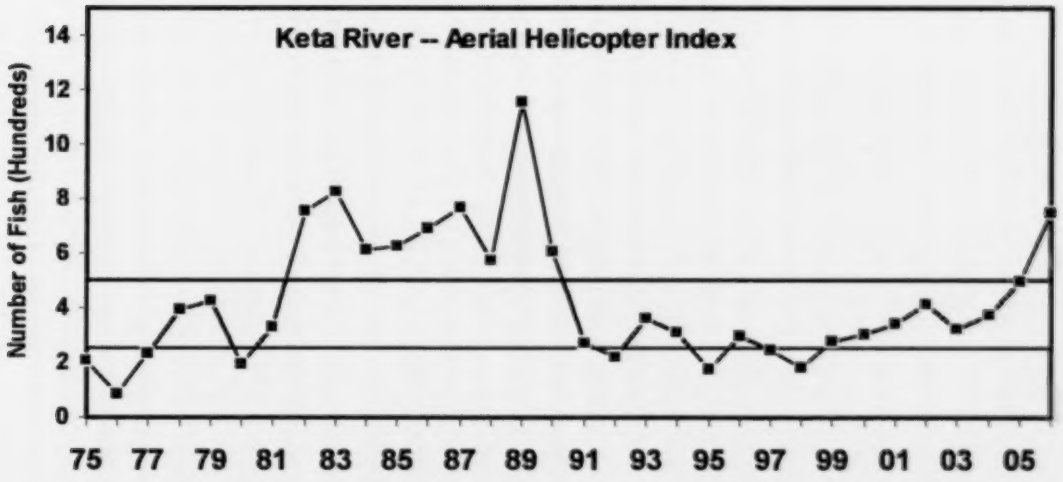
Commentary: The Unuk River is a moderate-sized glacial system that supports a moderate run of inside-rearing Chinook salmon. Indices of escapement since 1977 are based on the sum of peak index counts from six main tributaries (Pahlke 2003). Mark-recapture studies were implemented in 1994 and annually since 1997 (Weller and McPherson 2003). The current estimated expansion factor is 5.0 for index counts.



Commentary: The Chickamin River is a moderate-sized glacial system that supports a moderate run of inside-rearing Chinook salmon. Indices of escapement since 1975 are based on the sum of peak index counts from eight main tributaries (Pahlke 2003). Mark-recapture studies were performed in 1995, 1996, and 2001-2005. The current estimated expansion factor is 4.6 for index counts.



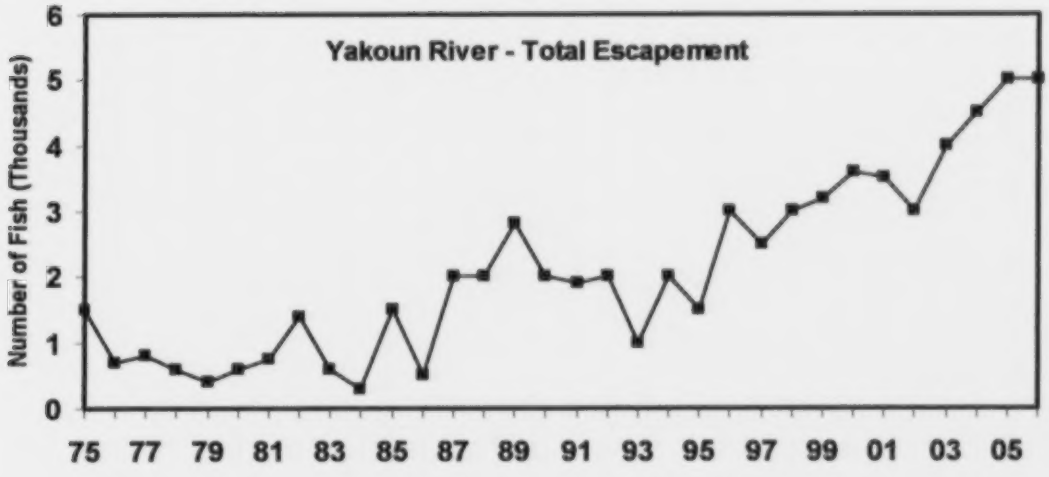
Commentary: The Blossom River is a small-sized non-glacial system that supports a small run of inside-rearing Chinook salmon. Indices of escapement since 1975 are based on the sum of peak index counts (Pahlke 2003). Mark-recapture studies performed in 1998 and 2004 to 2006 estimated an expansion factor range of 2.0 to 4.0.



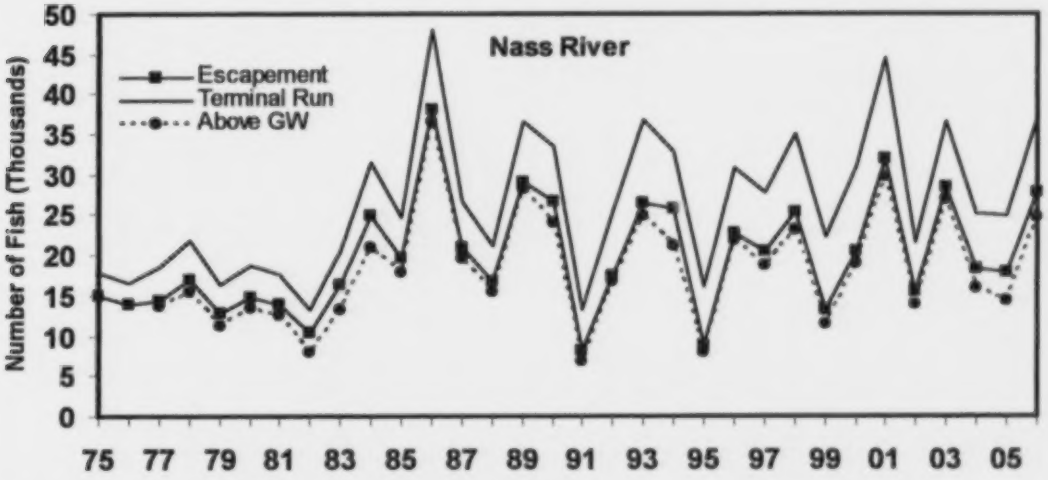
Commentary: The Keta River is a small-sized non-glacial system that supports a small run of inside-rearing Chinook salmon. Indices of escapement since 1975 are based on the sum of peak index counts (Pahlke 2003). Mark-recapture studies were performed 1998 to 2000 (Freeman et al. 2001). The current estimated expansion factor is 3.0 for index counts.

2.3.2 Canadian Stocks

Since the beginning of the Chinook rebuilding program of the 1985 PST, escapement goals for Canadian Chinook stocks were generally based on doubling the average escapements recorded between 1979-1982. The doubling was based on the premise that Canadian Chinook stocks were over-fished and that doubling the escapement would still be less than the optimal escapement estimated for the aggregate of all Canadian Chinook populations (see stock-recruitment curve in "Technical Basis of PSC Catch Ceilings," Figure 1, Attachment 4, PSC file 72006; PSC Office, Vancouver, BC). Doubling was also expected to be a large enough change in escapements to allow detection of the change in numbers of spawners and the subsequent production. The escapement goals of the Canadian stocks are currently being reviewed.

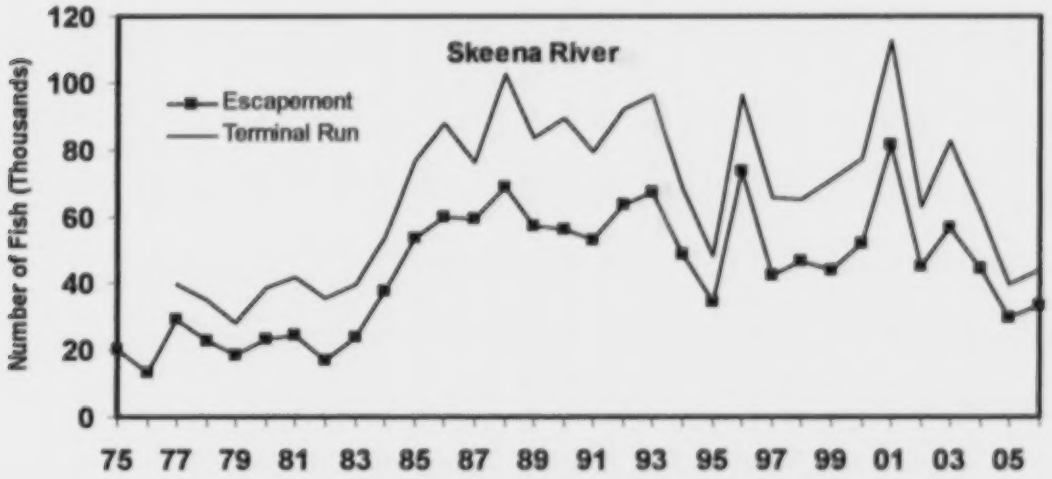


Commentary: The Yakoun River is the only significant Chinook-producing stream on the Queen Charlotte Islands. Chinook spawn primarily at the outlet of Yakoun Lake and are a summer-run stock. Visual estimates of escapement are made by foot surveys of the system. These estimates are then expanded into a total estimate of spawning escapement in the system. The effort spent on escapement surveys has declined in recent years and their accuracy (i.e. ability to estimate the actual escapement) is unknown.

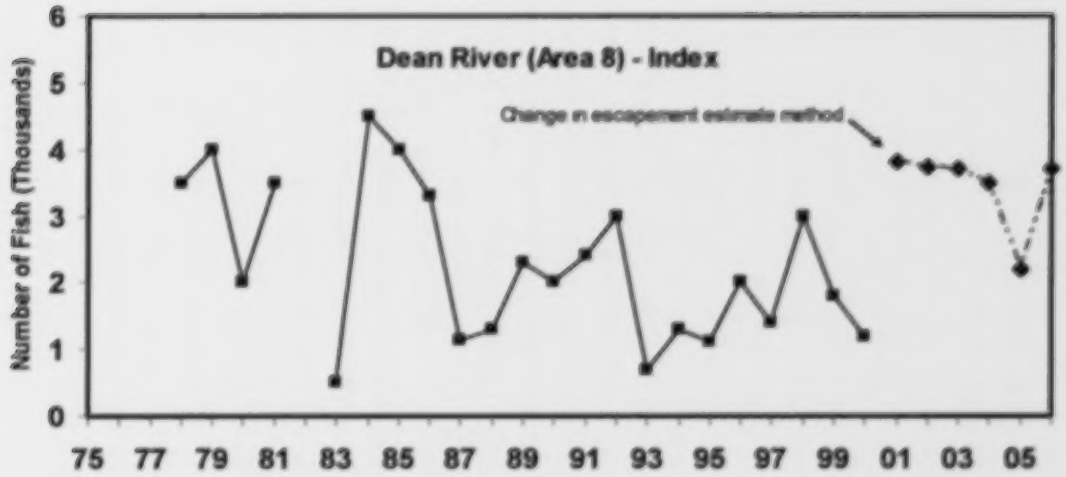


Commentary: The Nass River is the largest river in Area 3, representing a group of approximately 25 streams. Prior to 1992, CDFO observations of escapement were based on visual counts. Mark-recapture programs have been conducted since 1992 by the Nisga'a Fisheries to estimate total spawning escapement in the Nass River. The Nass mark-recapture program uses two fish wheels at Gitwinksihlkw (GW) in the lower Nass canyon to apply tags and two wheels at Grease Harbour in the upper canyon for recovery. A modified Petersen model, stratified by size category, was used to estimate the total population of Chinook past the tagging

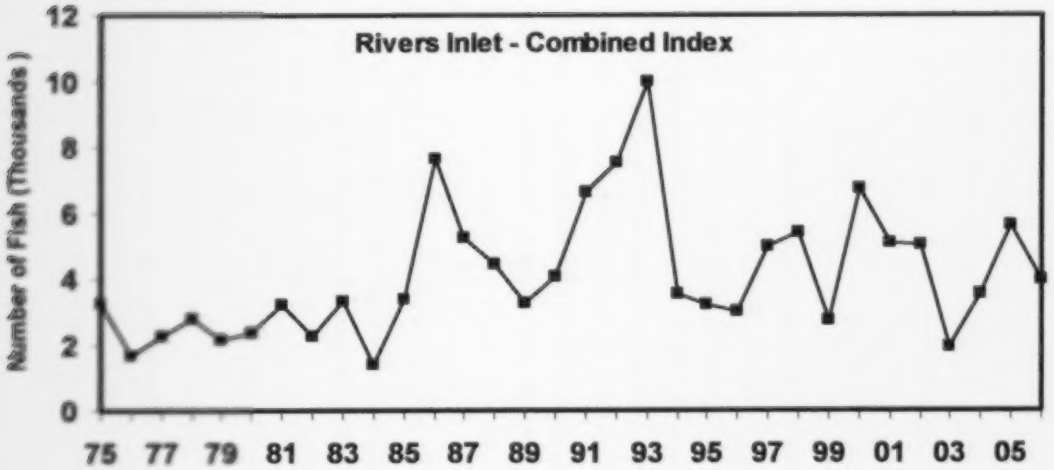
location. Tags were also recovered in upriver fisheries and on the spawning grounds. Spawning escapements were calculated as the estimated Chinook population past GW from the mark-recapture studies, less upriver catches in sport and First Nations fisheries. Three tributaries with Chinook populations enter the Nass River below GW. Visual estimates augmented by fence counts of the Kincolith River in 2001, 2002 and 2005 were used to estimate Nass River Chinook escapements below the fish wheels.

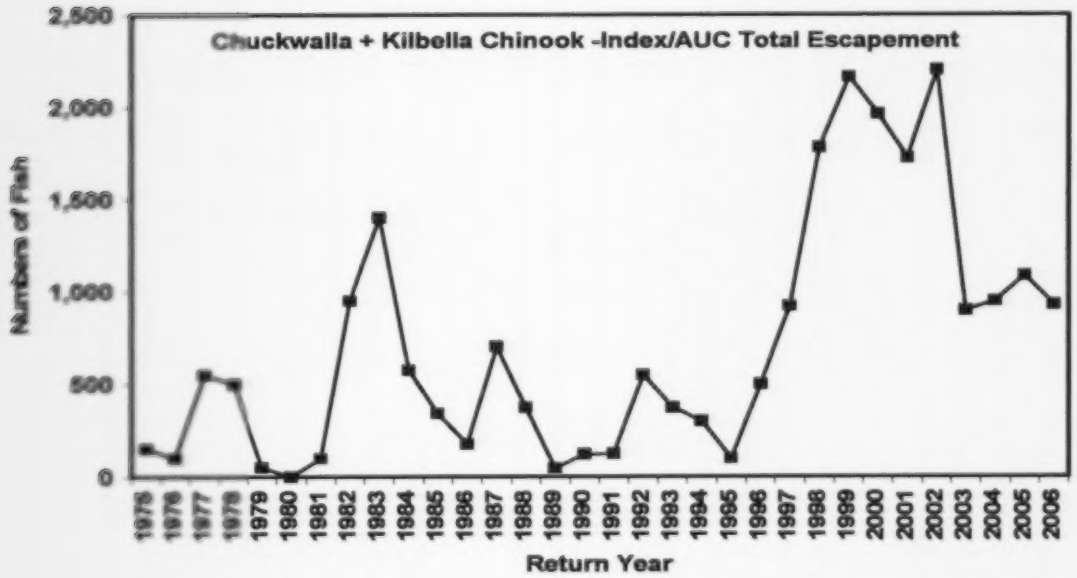


Commentary: The Skeena Chinook escapements above represent 40 streams which are consistently surveyed. The Skeena supports over 75 separate Chinook spawning populations, but three (Kitsumkalum, Morice, and Bear Rivers) account for about 70% of the total abundance. A second group of populations (Ecstall, Kispiox, and Babine rivers) have annual returns ranging from 1,000 to 5,000 spawners, and comprise about 13% of Skeena returns. Escapement estimates are generally based on visual observations from helicopter, fixed wing aircraft and/or from stream walking surveys. The Kitsumkalum River is the exploitation rate indicator stock for the Skeena Chinook complex. Spawning escapements in the Kitsumkalum have been estimated using a mark-recapture program since 1984.

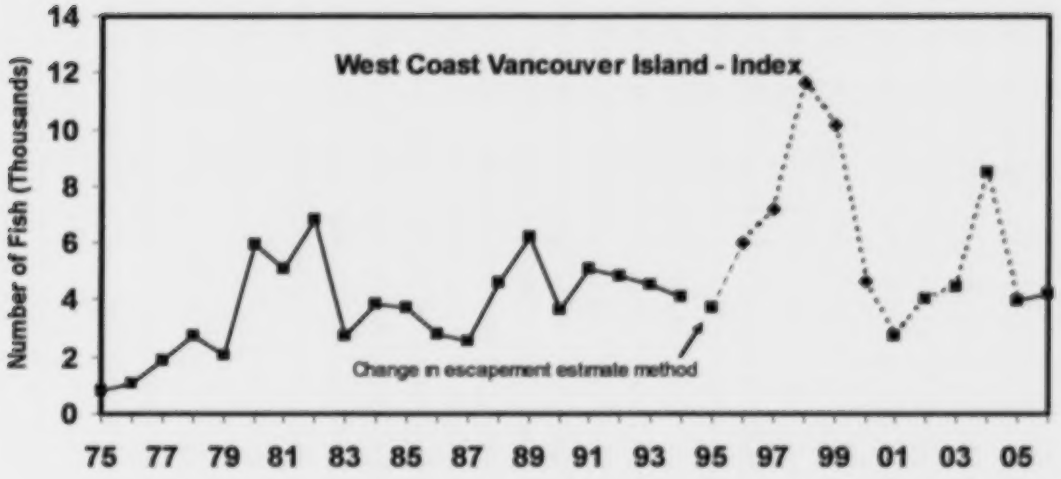


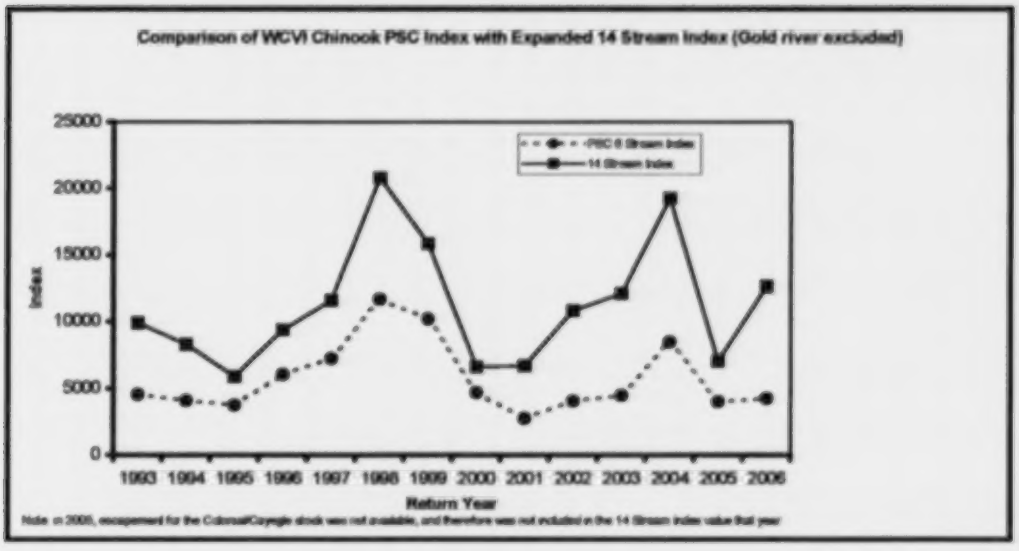
Commentary: The Area 8 Chinook stock consists of seven non-enhanced systems, but the Dean River is the main spawning population. Of all Chinook- producing streams in the Central Coast, the Dean is the best indicator in terms of consistent survey coverage and methodology. Chinook returning to the Dean River have an early-summer timing and most spawn in the lower river by July. Up until 2000, counts of spawning Chinook were made during 1-3 surveys and the peak count used as the escapement index. Survey counts were sometimes expanded to account for sections of the river that could not be surveyed in any year, but the counts were not extrapolated to total escapement of Chinook to the river. Since 2001, the annual number of aerial surveys has increased, allowing the calculation of area-under-the-curve (AUC) escapement estimates. In some years viewing conditions were poor and did not result in counts necessary to produce an AUC estimate. In these years maximum likelihood estimates were used to produce estimates as was the case in 2004(3,500). A Chinook mark-recapture program was initiated on the Dean River in 2006 to generate expansion factors for converting the current spawner indices (AUC estimate from helicopter flights) into estimates of total escapement. The preliminary estimate of escapement based on the mark-recapture program was 5,478 in 2006 compared to the AUC estimate of 3,700. For the purposes of this report however, the index of escapement is reported in the figures.


Rivers Inlet - Combined Index
Number of Fish (Thousands)
12
10
8
6
4
2
0
75 77 79 81 83 85 87 89 91 93 95 97 99 01 03 05

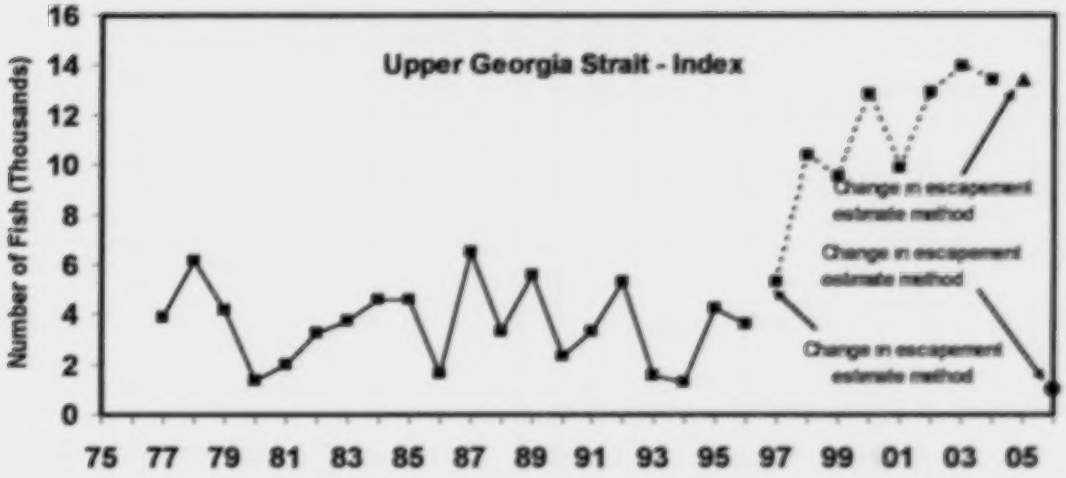

Chuckwalla + Kilbella Chinook -Index/AUC Total Escapement
Numbers of Fish
2,500
2,000
1,500
1,000
500
0
1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006
Return Year

Commentary: The Wannock, Chuckwalla, and Kilbella Rivers are the primary Chinook streams in Area 9 (Rivers Inlet area). Small tributaries of Owikeno Lake also contain Chinook but these populations are much smaller. The Wannock River contains the largest Chinook population, averaging 5,200 Chinook in the 1990s, while the Chuckwalla and Kilbella together averaged around 300. The Wannock River drains Owikeno Lake, is about six kilometers long, and is wide and turbid. The Chuckwalla and Kilbella rivers are much longer, drain from coastal mountains, and their visibility is much more variable depending on local weather (glacial flour to clear). The timing of these stocks also differs: the Wannock has late summer/fall run timing, while the other two are early summer Chinook stocks. Escapement estimates in the Chuckwalla and Kilbella rivers are derived from aerial surveys, whereas Wannock escapement is derived from expansions of carcass count to estimate total spawning escapement.

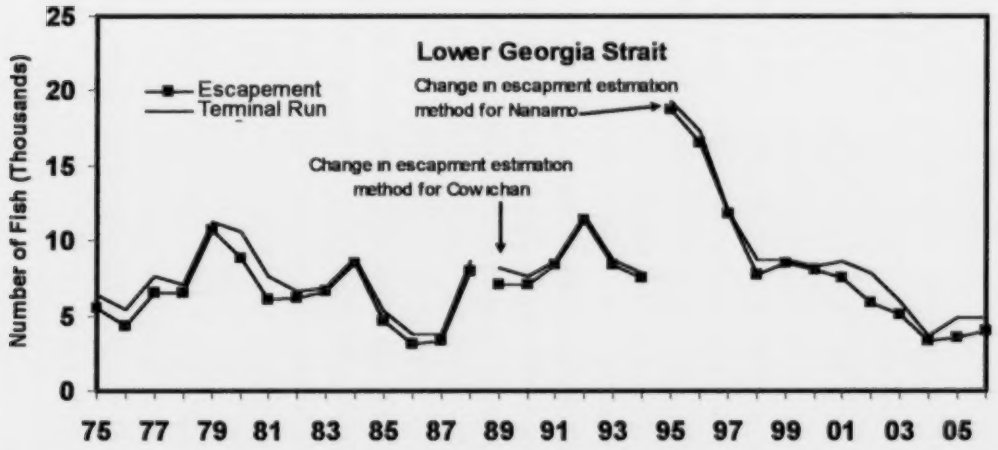




Commentary: The WCVI index represents the sum of escapements for six rivers (Marble, Tahsis, Burman, Artlish, Kaouk, and Tahsish), which were chosen to provide an 'index' of escapement for wild WCVI stocks in general. These stocks were chosen based on historical consistency of data quality. CDFO has developed a 14 stream expanded index which includes escapements to the six stream index plus the following WCVI streams: Colonial/Cayegle Creeks (Area 26), Leiner (Area 25), Megin, Bedwell/Ursus, Moyeha (Area 24) and Sarita, Nahmint (Area 23), and San Juan (Area 21). In 2005, the Colonial/Cayegle escapement was not available, and was therefore not included in the 14 stream index. In 2006, a mark-recapture program was conducted on the Burman River, in addition to the regular swim surveys. However, the escapement estimate used for the index in 2006 follows the same methodology as 2005.



Commentary: The Upper Strait of Georgia (UGS) stock index consists of four river systems (Klinaklini, Kakweiken, Wakeman, Kingcome) in Johnstone Strait mainland inlets and the Nimpkish River on northeast Vancouver Island. The accuracy of escapement estimates in the mainland inlet systems is likely poor due to low visibility of glacial systems, remote access, and timing of surveys. Escapement estimates have primarily been based on aerial counts which may not encompass Chinook run-timing. Swim surveys and stream walks have been conducted in the Nimpkish River. A fish wheel program implemented on the Klinaklini in 1997 was discontinued in 2004. Based on the portion of the assessment program that continued in 2005, estimated abundance in 2005 was assumed to be the same as in 2004. In 2006, the accuracy of the escapement estimate for the Klinaklini is considered to be very poor as it was based on one aerial survey. Consequently, escapement for this stock was not included in the 2006 index. No fish were observed in the Kakweiken River in 2006; there were no surveys during the Chinook run timing.



Commentary: Lower Strait of Georgia (LGS) rivers monitored for naturally spawning fall Chinook escapement are the Cowichan and Nanaimo rivers. Total Chinook returns to the Cowichan and Nanaimo rivers have been estimated since 1975. Prior to 1989, escapement estimates from the Cowichan River were derived from swim surveys and over-flights by Fishery Officers and hatchery staff. This approach was also used for the Nanaimo River prior to 1995. Since 1989 a counting fence has been used in the Cowichan, and since 1995 carcass mark-recapture surveys have been used in the Nanaimo. Since 2005, AUC estimates have been used in the Nanaimo. In 2006, a tagging study was used to determine survey life specific to the system. An escapement goal of 6,500 for the Cowichan was accepted by the CTC in 2005; a goal for the Nanaimo is still pending.

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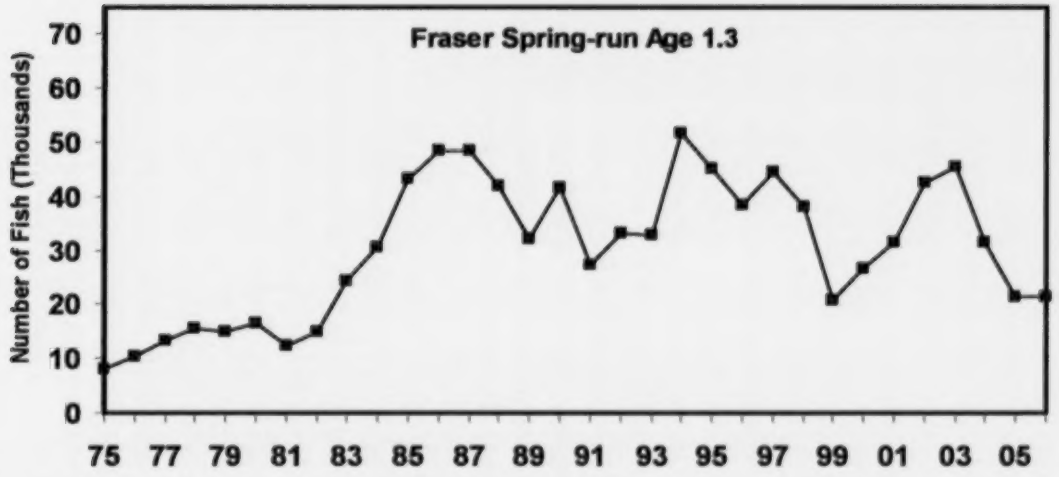
2.3.3 Fraser River Stocks

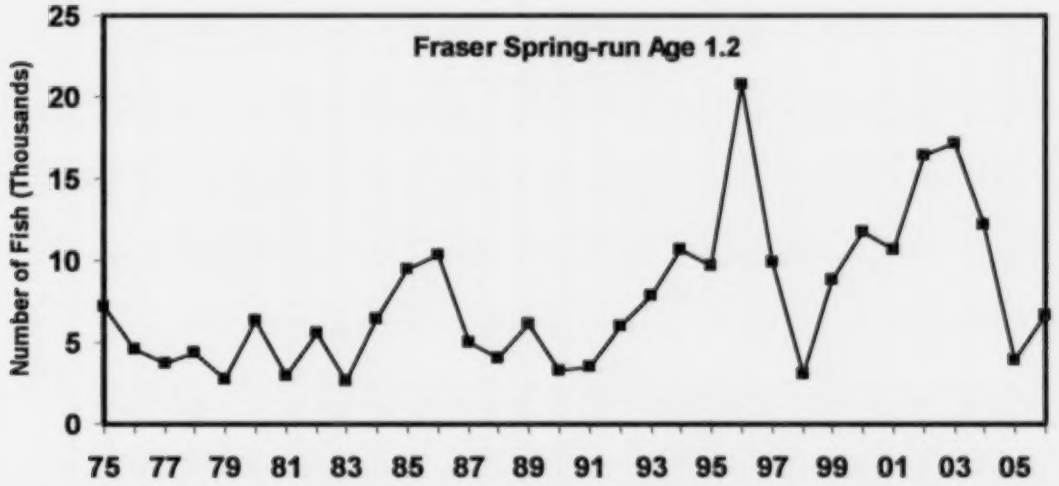
The Fraser River watershed is the largest Canadian producer of Chinook salmon. Fraser Chinook are comprised of a large number of local populations as described in CTC (2002b).

Much of our understanding of the status of Fraser Chinook is based on spawner escapement data. Most data are from visual surveys, which are generally biased low, although many estimates are considered to be reasonably precise. Visual survey data are generated from aerial over-flight surveys and the escapement estimate is usually obtained by dividing the peak count by 0.65 (Farwell et al. 1999). The CDFO continues to evaluate the appropriateness of this expansion factor and AUC methodology through calibration studies. Counting fences and mark-recapture projects exist for some systems, although most of the time series of escapement data from these projects are relatively short.

For populations other than the Harrison River, habitat-based models are being developed to estimate spawning capacity and spawner abundance producing maximum sustained yield. This habitat-based assessment will initially use predictive models of Chinook stock-recruitment relationships based on watershed area, although other habitat-based approaches will also be considered.

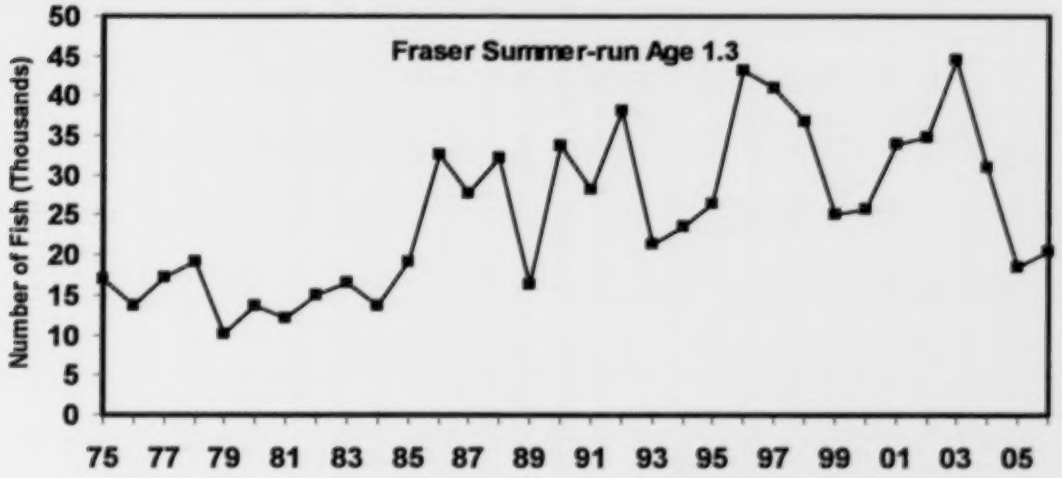


Commentary: This aggregate includes the Upper Pitt River and Birkenhead River stocks in the Lower Fraser, and the spring-run Chinook of the Mid and Upper Fraser, North Thompson, and South Thompson, but excluding those of the Lower Thompson (CTC 2002b). Stocks upstream of Prince George include the McGregor and Torpy River systems. In recent years, fence counts have been employed at the Chilako River in the Upper Fraser and at the Salmon River in Salmon Arm (South Thompson). Fence counts were discontinued at the Salmon River (Prince George) in 1998. Estimates for all other systems were generated from aerial surveys, typically, by dividing the peak count by 0.65.

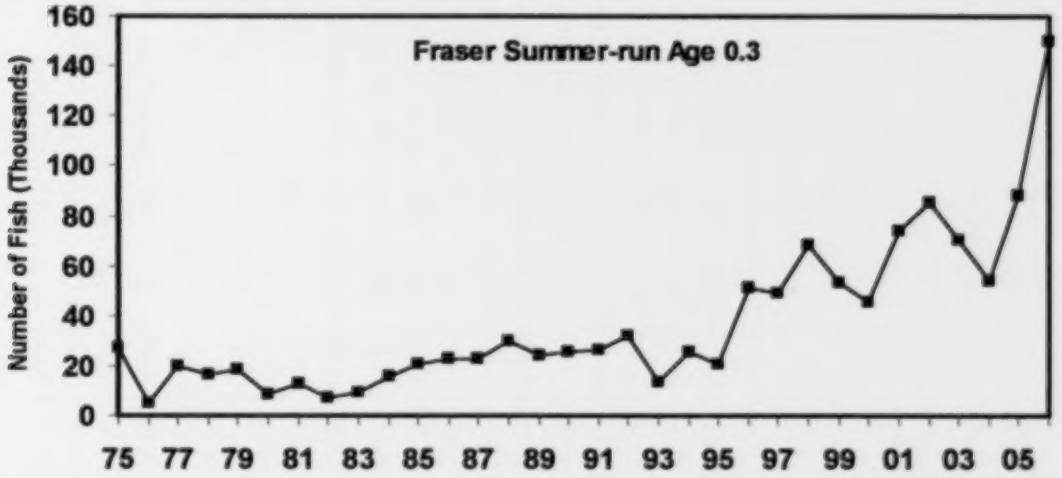


Commentary: The Fraser Spring-Run Age 1.2 aggregate includes six smaller body size populations that spawn in the Lower Thompson River tributaries, Louis Creek of the North Thompson and the spring-run fish of Bessette Creek in the South Thompson (CTC 2002b). Escapement estimates for each system are generated from visual surveys, either from aerial over-flights, stream walks or by dividing the peak counts by 0.65. The Nicola watershed is a site for

calibrating peak count expansion, AUC, and mark-recapture methods. Escapement to the Deadman River is estimated using a resistivity counter.

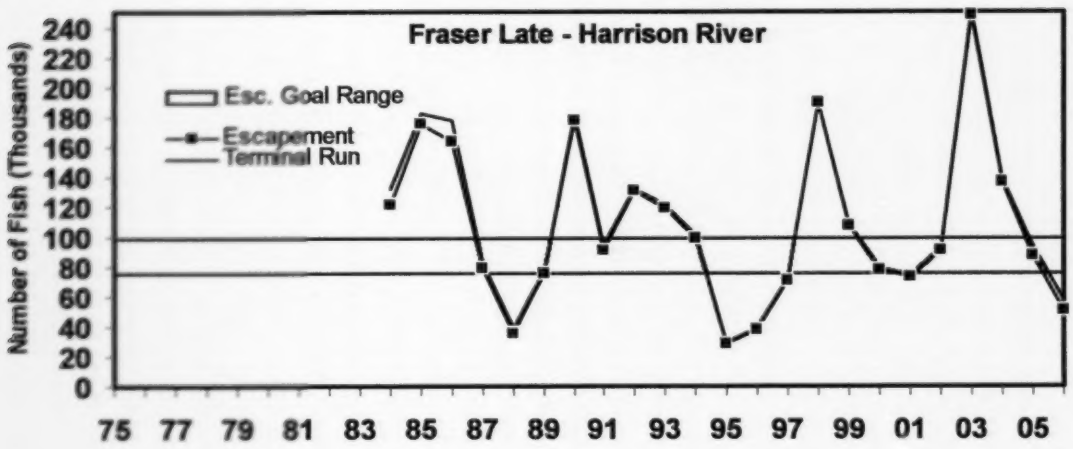


Commentary: The Fraser Summer-Run Age 1.3 stock complex includes 11 populations, spawning in large rivers, mostly below the outlets of large lakes. These include the Stuart and Nechako rivers upstream of Prince George, Chilko and Quesnel rivers in the mid Fraser and the Clearwater and North Thompson rivers in the North Thompson watershed (CTC 2002b). Escapement estimates are generated from aerial surveys by dividing the peak count by 0.65, except for the Stuart system where a mark-recapture estimate is generated, and for the Nechako River where multiple aerial counts are analyzed with the AUC method.

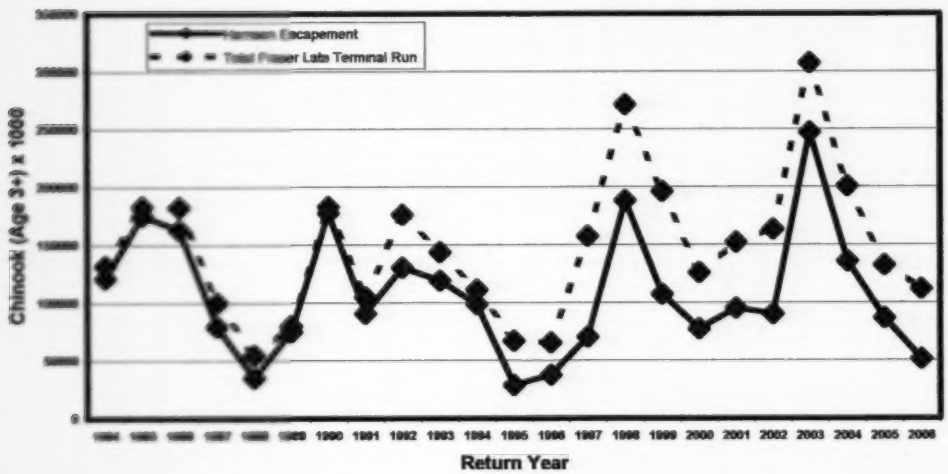


Commentary: The Fraser Summer-Run Age 0.3 aggregate includes six populations of Chinook spawning in the South Thompson watershed upstream of Kamloops and one in the lower Fraser. These include the Middle Shuswap, Lower Shuswap, Lower Adams, Little River and the South Thompson River mainstem, in the BC interior, and Maria Slough in the lower Fraser (CTC 2002b). Most escapements are estimated by expanding peak visual survey counts (as in previous

three Fraser aggregates). Further, the lower Shuswap River is a site for calibrating peak count expansion, AUC, and mark-recapture methods.



Harrison River Fall Chinook Escapament and Total Fraser Late Terminal Run
(Harrison R +Chilliwack R Escapements + Terminal Catch)

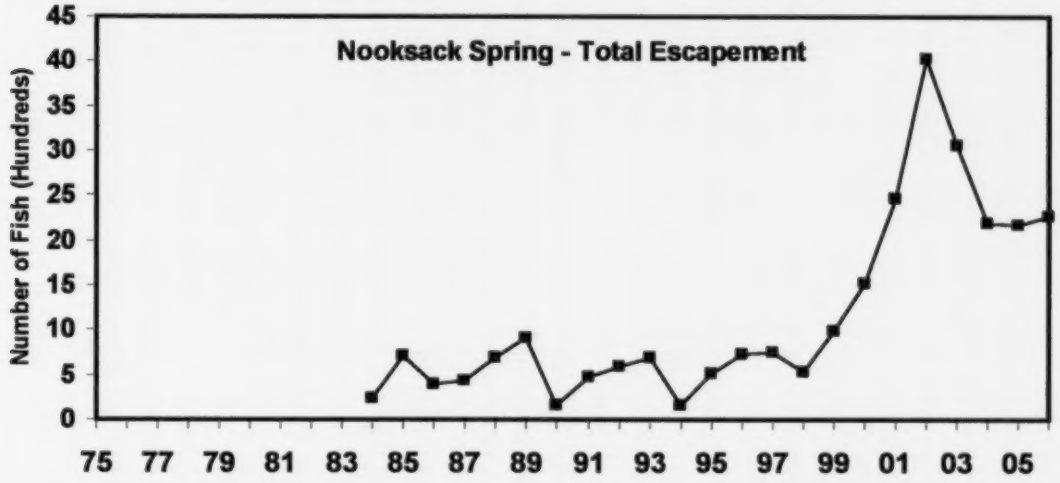


Commentary: The lower Fraser stock is dominated by fall returning Harrison-origin Chinook that includes natural spawners in the Harrison River and Harrison-origin fish that were introduced to the Chilliwack River. Since 1984, mark-recapture studies have been conducted annually to obtain reliable estimates of spawning escapements. Estimates of fall Chinook escapement to the Chilliwack River are based on a procedure long established by the Chilliwack Hatchery staff for expanding the number of carcasses counted in standardized reaches of the river.

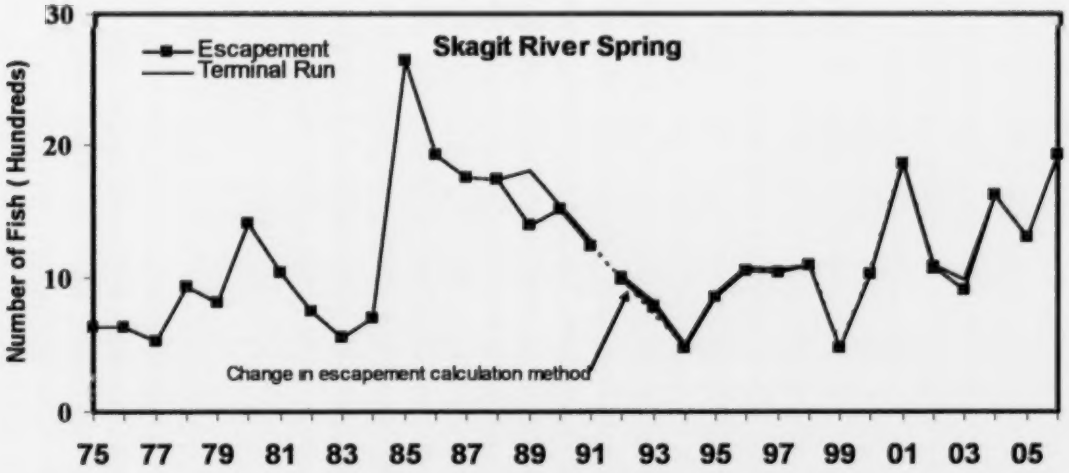
2.3.4 Washington, Oregon and Columbia River Stocks

The PSC escapement indicator stocks in Washington, Oregon, and Idaho are separated into five groups: Puget Sound, Washington Coastal, Columbia River, North Oregon Coastal, and Mid Oregon Coastal. The indicator stocks include a variety of run timings and ocean distributions.

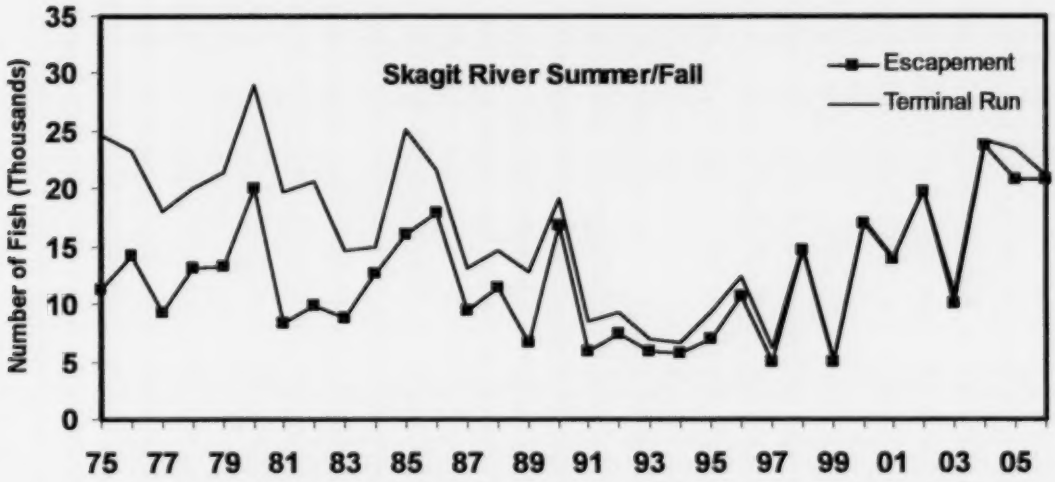
Biologically based escapement goals have been reviewed and accepted by the CTC for three fall stocks (Queets, Quillayute, Hoh), two Spring/summer stocks (Queets, Hoh), three Columbia River stocks (Lewis, Upriver Brights and Columbia River summer), and three Oregon coastal stocks (Nehalem, Siletz and Siuslaw).



Commentary: In 2006, the escapement estimate was 1,916 for the North Fork and 355 for the South Fork. However, only 10% of the North Fork escapement is identified as natural-origin spawners, and the bulk of the run is composed of hatchery-origin returns from the supplementation program. The conservation objective for 2006 was for an Adult Equivalent (AEQ) exploitation rate across all southern U.S. fisheries not to exceed 7% (PFMC 2006). The state-tribal escapement goal established for this stock is 4,000 spawners. There is a small ceremonial and subsistence directed fishery on the spring Chinook and substantial incidental impacts during the terminal fall Chinook fisheries.

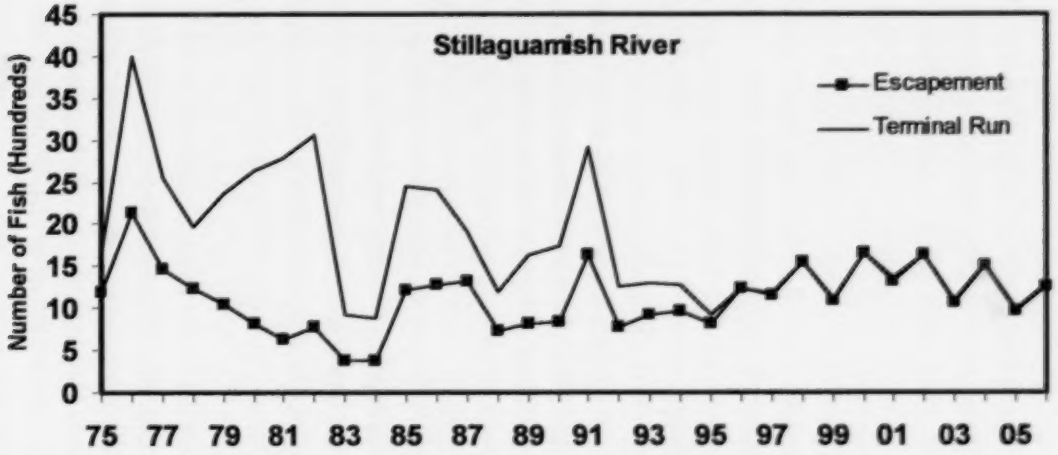


Commentary: Due to changes in spawning index areas, beginning in 1992 for the Cascade stock and 1994 for the Sauk and Suiattle stocks, escapements are not directly comparable to previous numbers. The past state-tribal escapement goal of 3,000 adults was the average of the estimated escapements from 1959-1968 (PFMC 1997). In 2006 the Recovery Exploitation Rate (RER) for Skagit springs was 38%, with 576 spawners as the low abundance threshold. While no postseason estimate is available, the preseason expectation for 2006 was for a total rate of 18.4% (PFMC 2006). Proposed escapement goals, as stated in the draft Shared Strategy Recovery Plan, are 1,200 Chinook for low marine survival years and 2,100 Chinook for high marine survival years. The 2006 escapement estimate was 1,919 natural spawners.

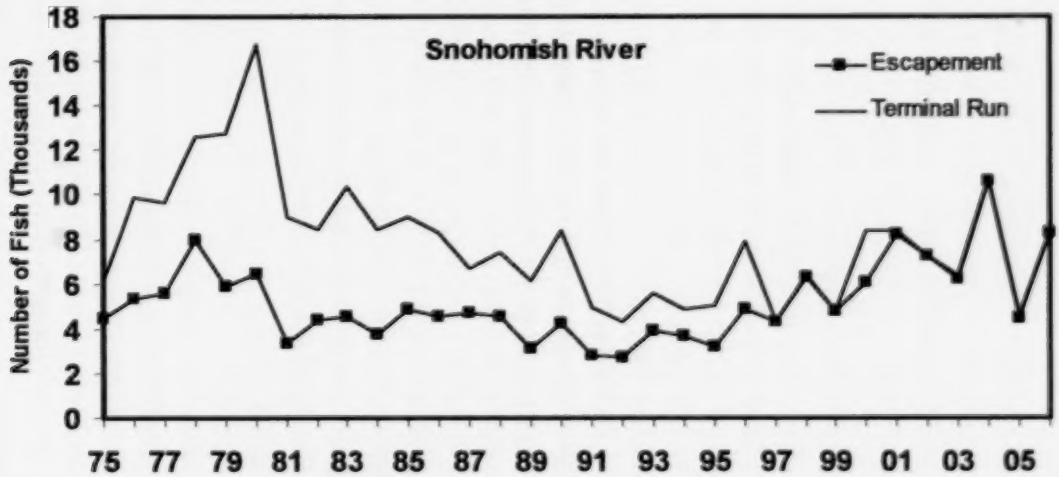


Commentary: Projects to improve escapement estimates of Skagit summer/fall Chinook have recently been funded through the Letter of Agreement (LOA) process. They included: development of variance estimates, determination of age and sex composition of the escapement, and evaluation of the 21-day redd life assumption and 2.5 fish/redd expansion value. The state-tribal escapement goal for this stock is 14,850, the average of the 1965-1976 escapements (Ames

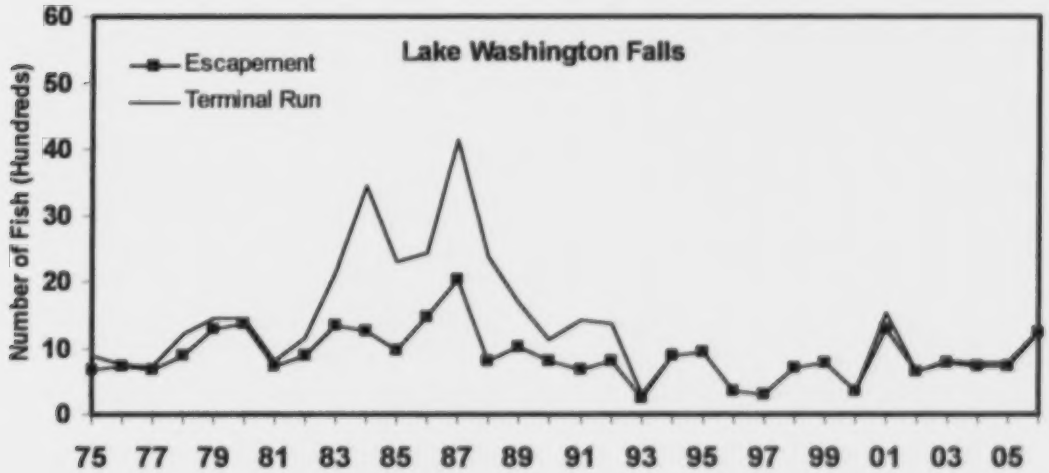
and Phinney 1977). Little terminal harvest has occurred since 1997. In 2006, the Federal Management Plan (FMP) conservation objective for this stock was for a RER across all fisheries not to exceed 50%. The 2006 predicted exploitation rate was 30.3%. The 2006 escapement estimate was 20,819. The terminal run estimate was 21,196.



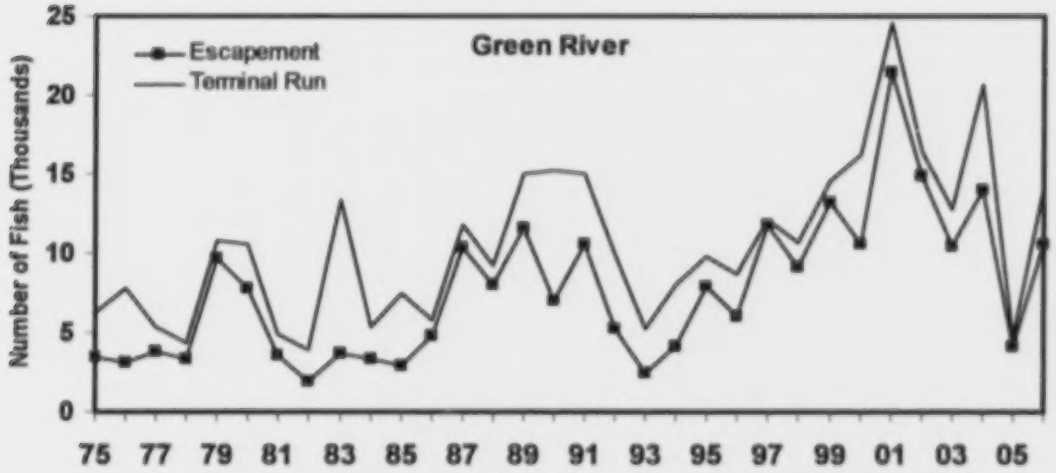
Commentary: Natural spawning broodstock are collected annually in the river to maintain a CWT indicator stock program and to augment natural production. From 1989 to 1996, approximately 18% of the escapement was comprised of returns from this program. (1996 to 2005 average is 38% hatchery origin returns)The state-tribal escapement goal of 2,000 fish is the average of the 1973-1976 escapements (Ames and Phinney 1977). There have been no terminal harvests since 1996. The 2006 FMP conservation objective for the combined summer/fall stock was for an AEQ exploitation rate not to exceed 15% in the southern U.S. fisheries. The preseason estimate of this rate was 12.2%. The escapement estimate for 2006 was 1,254 Chinook (1,035 for the North Fork and 219 for the South Fork).



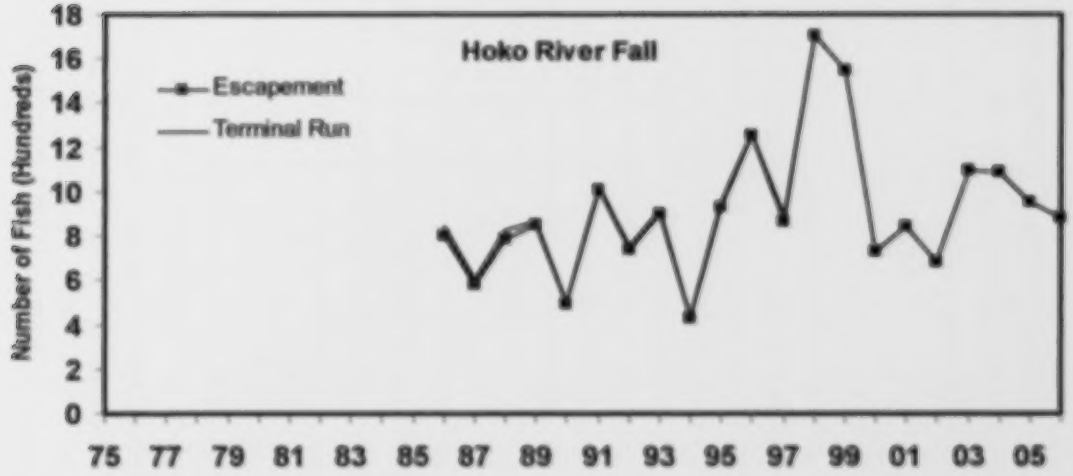
Commentary: Some terminal area harvest of Snohomish River Chinook occurs in Area 8 incidental to net and sport fisheries targeting Tulalip Hatchery Chinook salmon. Historic terminal run size and catch estimates derived from run reconstruction are being revised to reflect the results of otolith marking studies. The state-tribal escapement goal for this stock had been 5,250 fish (the average of the 1965-1976 escapements). The FMP conservation objective was for a total AEQ exploitation rate not to exceed 15% in southern U.S. fisheries. The preseason prediction of that rate was 14.7%. The 2006 escapement was estimated at 8,308 natural spawners.



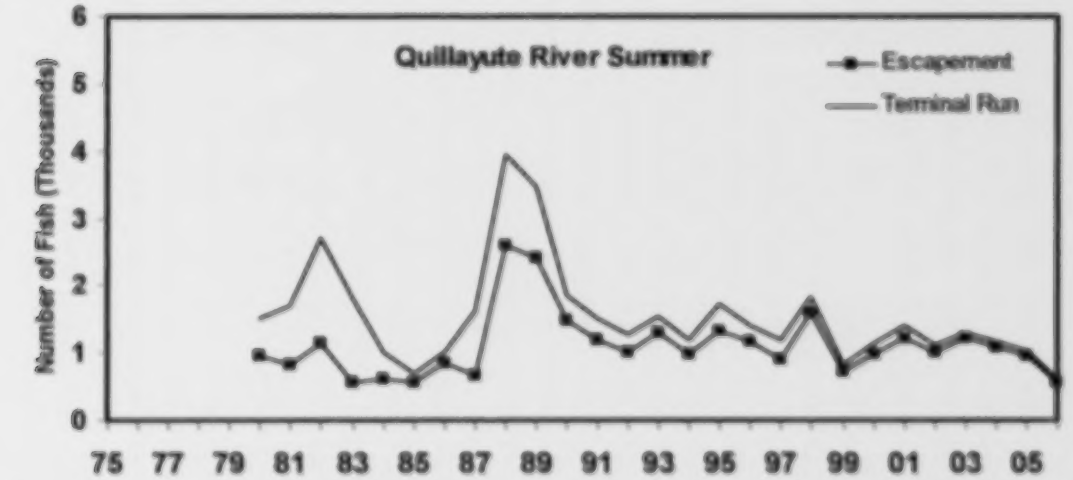
Commentary: Substantial artificial production occurs in Issaquah Creek and at the University of Washington. In 1994, spawning estimates were reviewed, and an attempt was made to find a consistent method to estimate escapement. A state-tribal escapement goal of 1,200 has been established for the Cedar River spawners. The single targeted goal represents an index count for the Cedar River. This objective reflects the average of observed spawning escapements from 1965-1969. It should be noted that although there are no hatchery fish released from the Cedar River, nearly 40% of the spawning fish were of hatchery origin. The FMP conservation objective for 2005 for Lake Washington Fall Chinook was for an AEQ exploitation rate not to exceed 15% in all preterminal southern U.S. fisheries. The preseason expected AEQ exploitation rate was 16.7%. The 2006 escapement was a total of 1,219 spawners (1,090 to Cedar and 129 to the north tributaries). There have not been freshwater terminal fisheries on this stock since 1995.



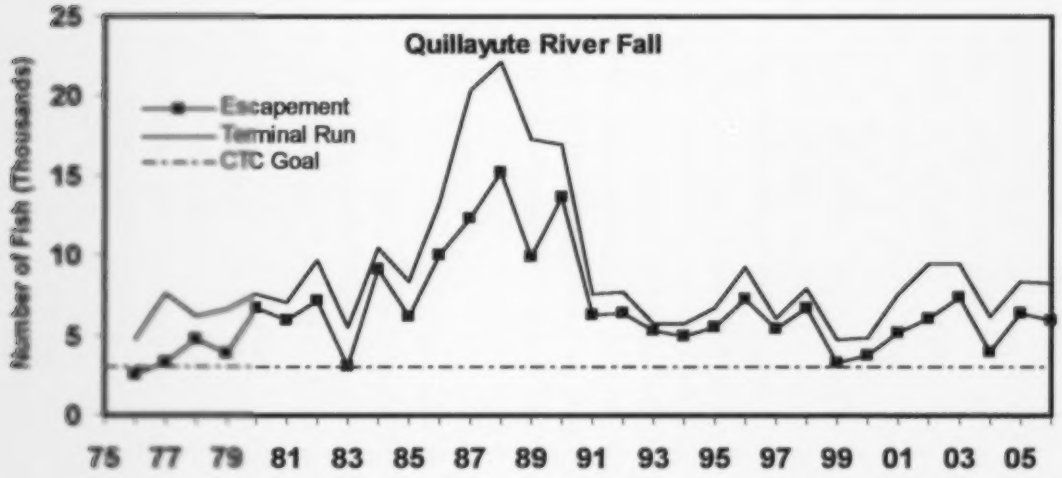
Commentary: There is a large hatchery program in this basin and these fish comprise a large portion of the return. The average is about 52% for the years 1996-2003. Tagging studies were conducted in 1975 and 1976 to estimate numbers of returning adults; results were in close agreement with estimates made from aerial surveys. No attempt is made to adjust the estimate of natural escapement for the presence of hatchery origin fish. Projects to improve escapement estimates of Green River fall Chinook, were recently funded through the LOA process, including evaluation of the spatial and temporal distribution of escapement, alternative methods of estimating escapement, and the validity of the 21-day redd life assumption and 2.5 fish/redd expansion value. The state-tribal escapement goal of 5,750 naturally spawning adults is the average of the 1965-1976 escapements (Ames and Phinney 1977). Beginning in 2003, a new method for estimating natural spawning escapement was employed based on a mark/recapture studies conducted 2000-2002. The estimate of mainstem females was compared to the "adjusted" peak count of visible redds for that year, with the assumption that each female dug a single redd. In 2003, the mean ratio of mainstem females to mainstem adjusted peak redds (3.109) from the three study years was applied to the 2006 adjusted peak redd count to estimate mainstem female spawners. A sex ratio of 1.5 males per female was then used to expand the number of female spawners to total mainstem escapement. The 2006 FMP conservation objectives for this stock was for a total AEQ exploitation rate not to exceed 15% in pre-terminal southern U.S. fisheries, and an escapement of at least 5,800 adults. The 2006 escapement estimate for natural spawning Chinook was 10,247. The number of hatchery-origin spawners was estimated to be almost 60%.



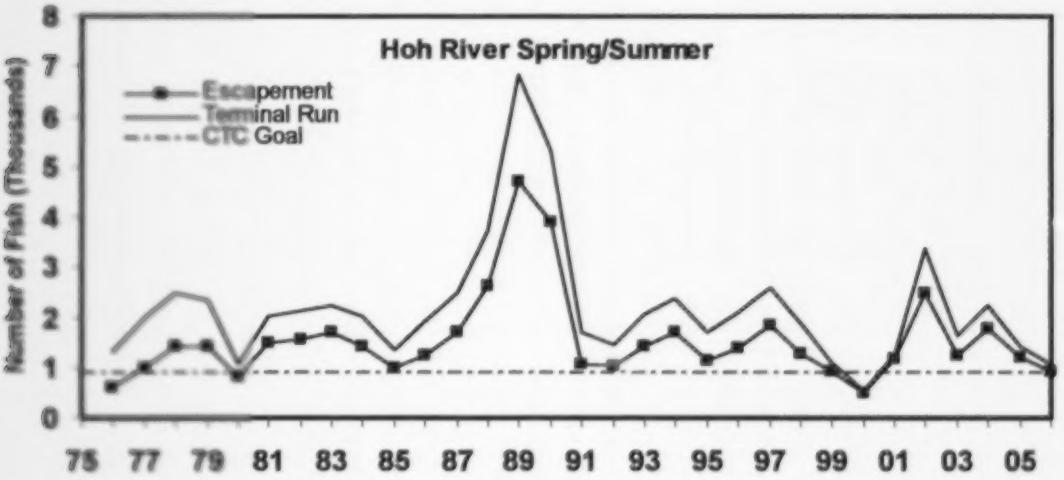
Commentary: There are no directed fisheries on Chinook returning to rivers entering the Strait of Juan de Fuca. The escapement goal established by state and tribal managers is 850 naturally spawning adults. This single targeted goal was developed as a MSY proxy. The escapement goal was calculated by estimating the amount of available spawning habitat, then expanded utilizing assumed optimal redds per mile and fish per redd values (Ames and Phinney 1977). The 2006 escapement estimate was 880.



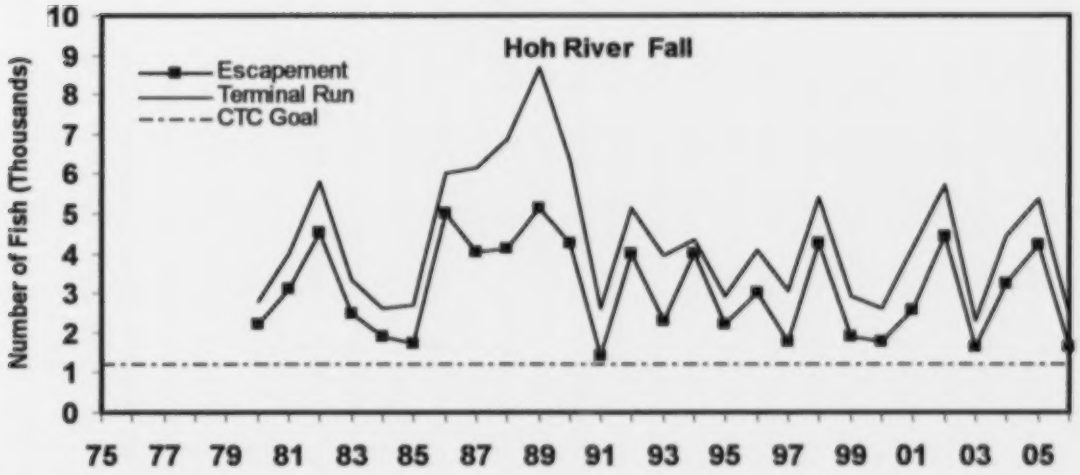
Commentary: A summer Chinook hatchery program using native stock operated from the mid-1970s to the mid-1980s. Spring Chinook of non-native origin were introduced in a hatchery program in the early 1970s. CWT analyses since then have demonstrated significant straying of these spring Chinook into the summer Chinook spawning population. Estimates from 1991-1995 averaged 47% hatchery origin strays in the naturally spawning population. In 1996, fry plants were eliminated and the smolt plants were reduced. Summer Chinook are managed for a fixed escapement goal of 1,200 adults and jacks combined (PFMC 2003). The 2006 escapement estimate for summer Chinook was 553. This continues a trend of stable returns near the management goal for this stock.



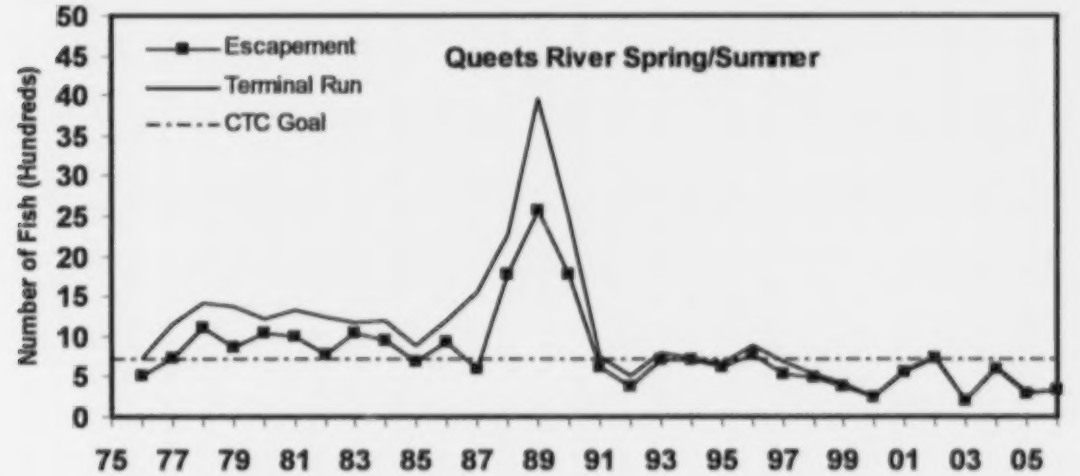
Commentary: No hatchery production of fall Chinook currently occurs in the Quillayute River basin; the program was discontinued in the late 1980s. Since 1991, the returning run size has fluctuated within a range comparable to run sizes observed prior to 1984. The 2006 escapement estimate was 5,970 with a total terminal estimate of 8,246. Terminal fisheries are managed for a harvest rate of 40%, with an escapement floor of 3,000 fish (PFMC 2003). This objective is designed to actively probe at and above estimates of escapements that produce maximum sustained harvest (MSH), while minimizing potential detrimental effects of existing fisheries. Stock production analyses of spawning escapements from 1968-1982 were used to determine the initial escapement floor.



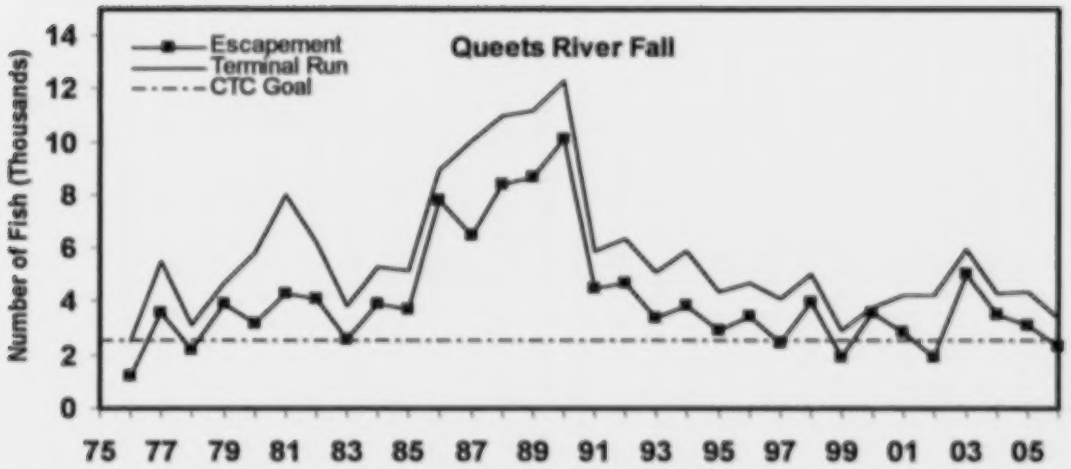
Commentary: Similar to many of the other Washington coastal stocks, Hoh River spring/summer escapements have been relatively stable except for much larger returns in 1988, 1989, and 1990. The terminal return for this stock declined from 1997 to 2000, but has since rebounded. Terminal fisheries are managed to harvest 31% of the river run, with an escapement floor of 900 fish (PFMC 2003). This objective is designed to allow a wide range of spawner escapements from which to eventually develop an MSY objective or proxy while protecting the long-term productivity of the stock. Stock production analysis of spawning escapement for brood years 1969-1976 was utilized to determine the initial escapement floor. The 2006 escapement estimate and total run size were 904 and 1,061 respectively.



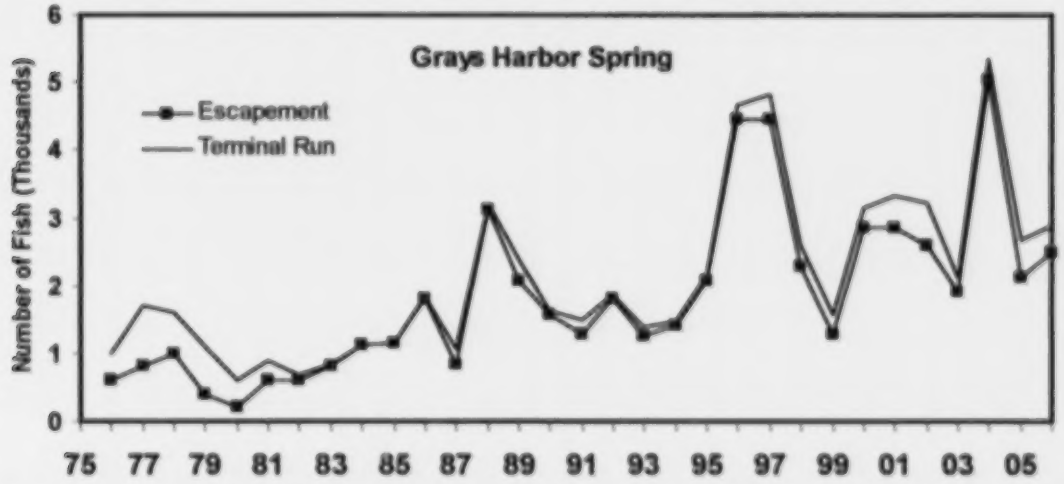
Commentary: The natural escapement estimates include fish taken for broodstock in the 1980s. This stock is managed to harvest 40% of the terminal run, with an escapement floor of 1,200 spawners (PFMC 2003). This objective is designed to actively probe at and above estimates of the escapements that produce MSH, while minimizing potential detrimental effects of existing fisheries. Stock production analyses of spawning escapements from 1968-1982 were utilized to determine the initial escapement floor. The 2006 escapement estimate was 1,632. Terminal run size estimate was 2,414.



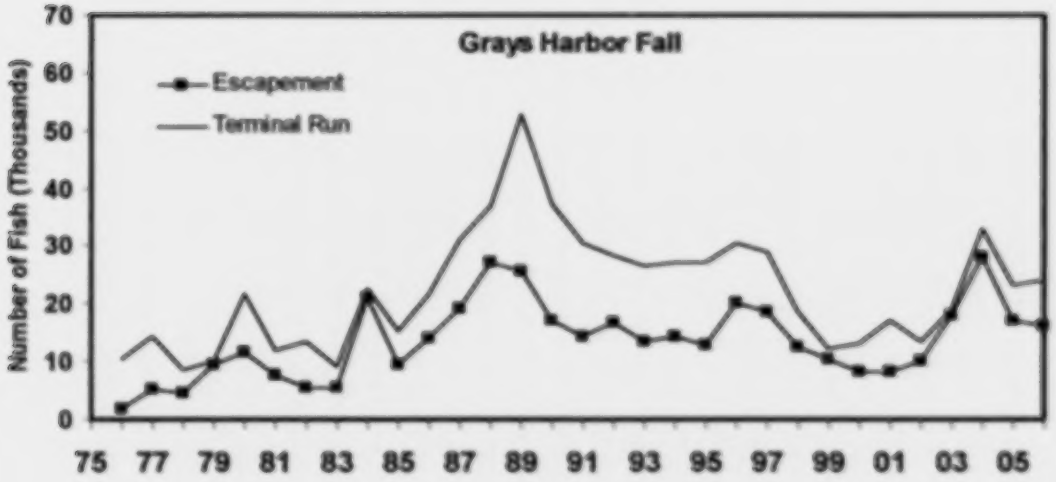
Commentary: Terminal fisheries are managed to harvest 30% of the river run size, with an escapement floor of 700 fish (PFMC 2003). This objective is designed to actively probe at and above the estimates of escapement that produce MSH. Since 1990, terminal fisheries have had minimal impact on this stock as returns to the river have rarely exceeded the escapement floor in this time frame. Since 2000, sport anglers have been required to release all Chinook during the summer, and tribal fisheries have been limited to one tribal netting day for ceremonial and subsistence purposes. Stock production analysis of spawning escapement for brood years 1969-1976 were used to determine the initial escapement floor. The 2006 escapement estimate was 330, with a terminal run size of 336.



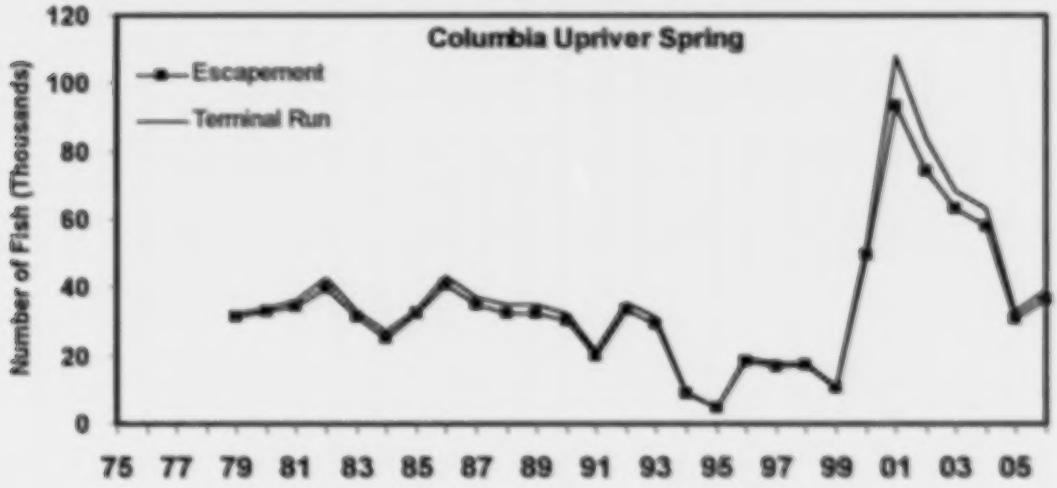
Commentary: The 2006 escapement and total run size were 2,338 and 3,352, respectively. Terminal fisheries are managed to harvest 40% of the river return, with an escapement floor of 2,500 spawners (PFMC 2003). This objective is designed to actively probe at and above estimates of the escapements that produce MSH. Stock production analyses of spawning escapements from 1967-1982 were used to determine the initial escapement floor.



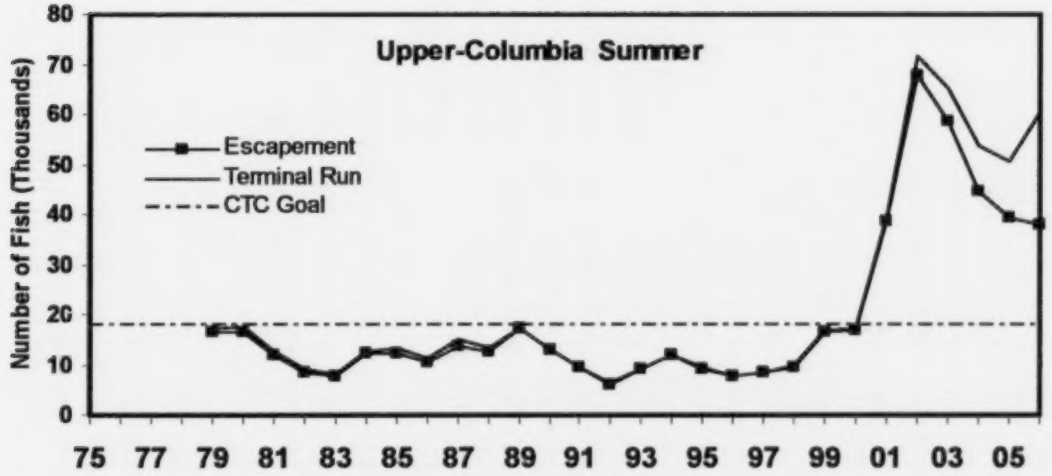
Commentary: The Grays Harbor spring Chinook stock is managed for a fixed natural spawning escapement goal of 1,400 fish (PFMC 2003). This single targeted goal was developed as a MSY proxy. This objective was derived from actual spawning data from the mid- to late 1970s, expanded to include additional habitat not covered by spawner surveys. The 2006 escapement was 2,481 Chinook and the 2006 terminal run was 2,870 Chinook.



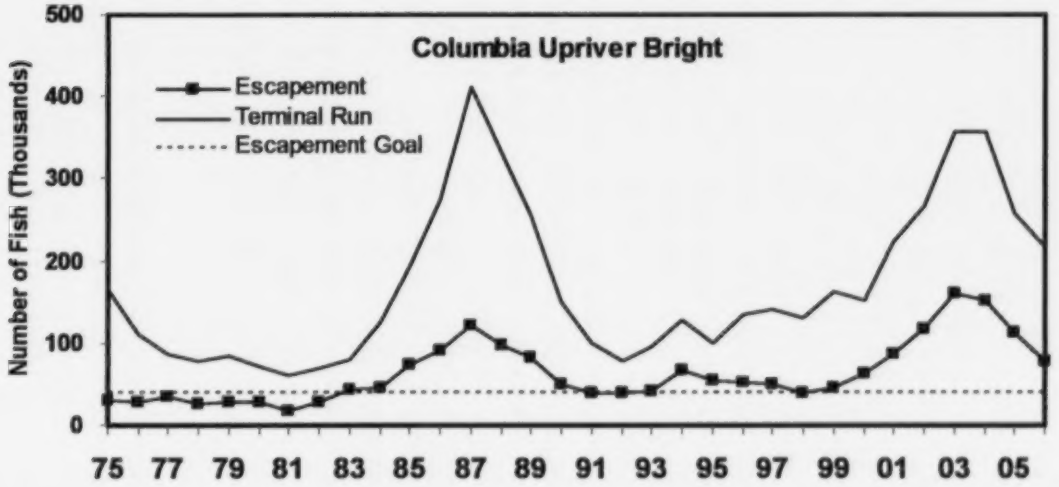
Commentary: Grays Harbor fall Chinook are managed for a maximum sustained production escapement goal of 14,600 spawners for the Chehalis and Humptulips systems combined (PFMC 2003). This single targeted goal was developed as an MSY proxy. The objective represents assumed optimal spawner density based on estimated available habitat. The 2006 escapement was 16,197 Chinook. The terminal run was 23,987 Chinook salmon.



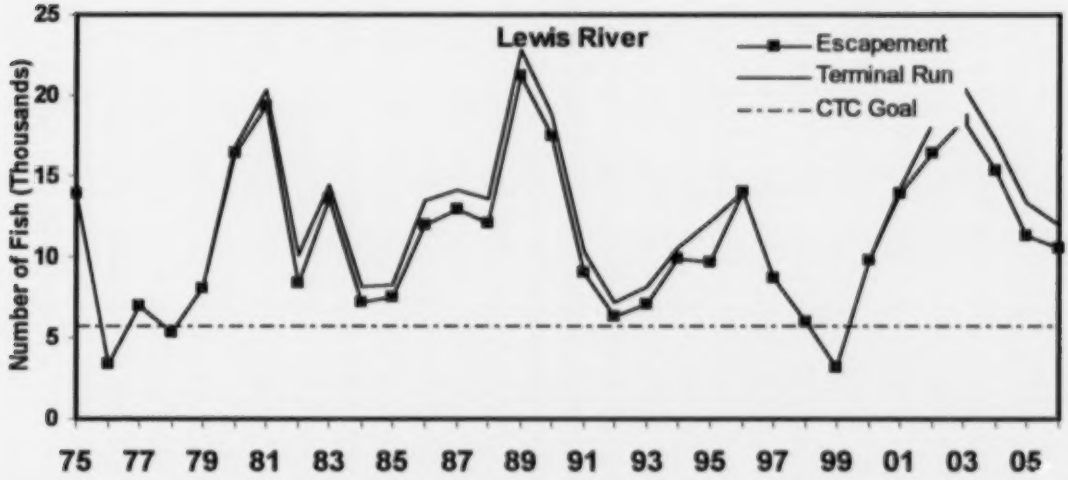
Commentary: In 1992, Snake River spring/summer naturally spawning Chinook were listed under the ESA. In past escapement assessments, the CTC used the goal of 84,000 natural spawners passing Bonneville Dam (an estimated 70% wild portion of the 120,000 specified in the original 5-year plan for U.S. v Oregon). The interim management goal for the Columbia River Fish Management Plan (CRFMP 1988) for Columbia River Springs was 115,000 hatchery and wild adult Chinook counted at Bonneville Dam and 25,000 naturally produced plus 10,000 hatchery produced adults counted at Lower Granite Dam. However, the CRFMP is currently being renegotiated. The 2006 escapement at Lower Granite Dam was 29,588 natural spawners. Terminal harvests were severely constrained from 1977 until 2000, with incidental harvests in lower river fisheries averaging 2% and total harvest in treaty Indian fisheries averaging 5.5% (TAC 1999). Since 2001, the terminal harvest rates have been between 13.5% and 19.0%.



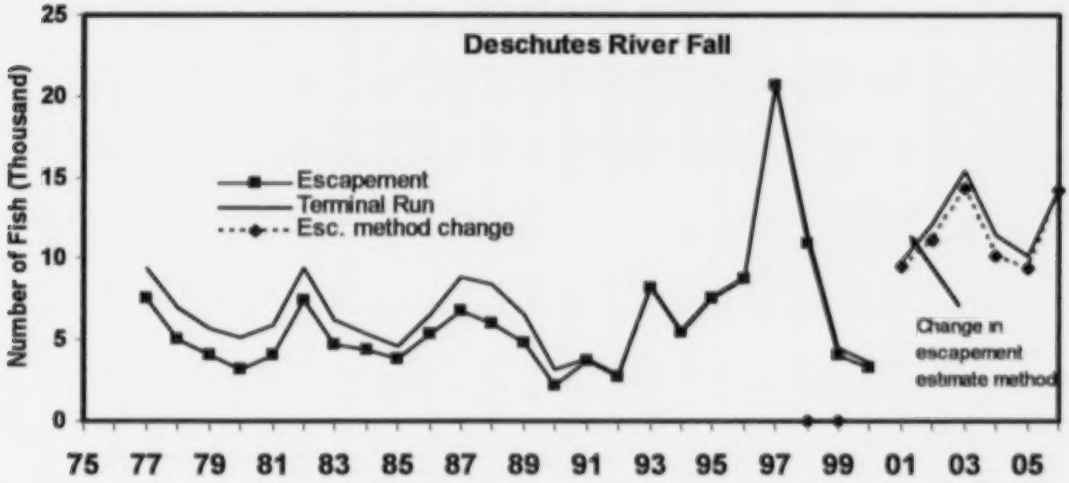
Commentary: Productivity is limited by loss of downstream migrants, habitat degradation, lack of screens on water diversions, high water temperatures, low flows, and sediment-laden irrigation water returns (CBFWA 1990). The 2005 escapement was 39,138 naturally spawning fish. Directed commercial fisheries for upper Columbia River summer Chinook resumed in 2003 above Bonneville Dam and in 2004 below Bonneville Dam when the Columbia Upriver Summers began to exceed the interim management goal of 29,000 hatchery and natural origin adults as measured at the Columbia River mouth. The non-Indian and tribal harvest rates between 2003 and 2006 averaged 5.7% and 13.0%, respectively.



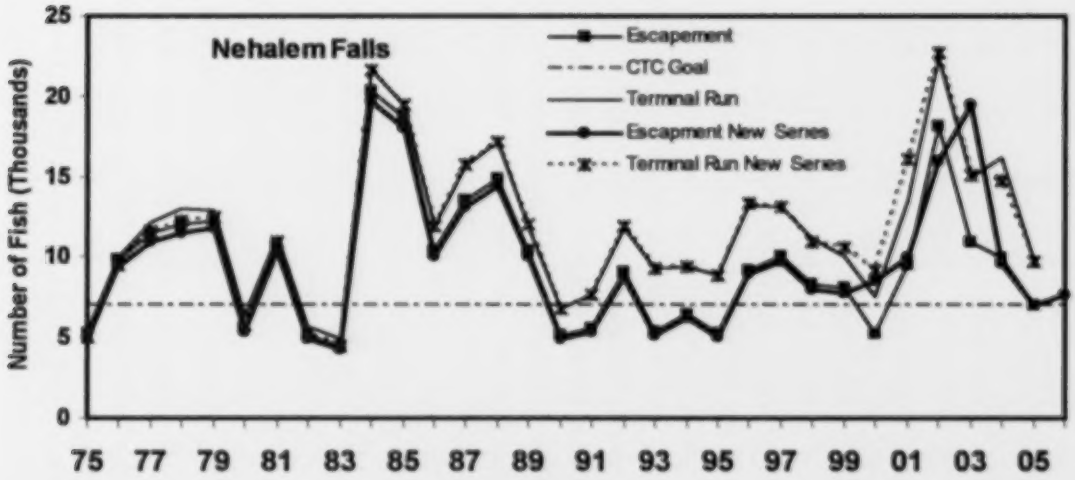
Commentary: The escapement goal is 40,000 naturally spawning fish. The 2002, 2003, and 2004 escapements past McNary dam of 141,682, 179,970, and 168,679 were the largest since the peak escapement and terminal run in 1987. The 2006 escapement was 90,971 through McNary Dam.



Commentary: The escapement goal for the Lewis River is 5,700 naturally spawning fish. Except in 1999, escapements have been above the goal since 1979. The 2002, 2003, and 2004 returns and escapements of Lewis River fall Chinook were the largest since 1990. The estimated escapement in 2006 was 11,725 Chinook.



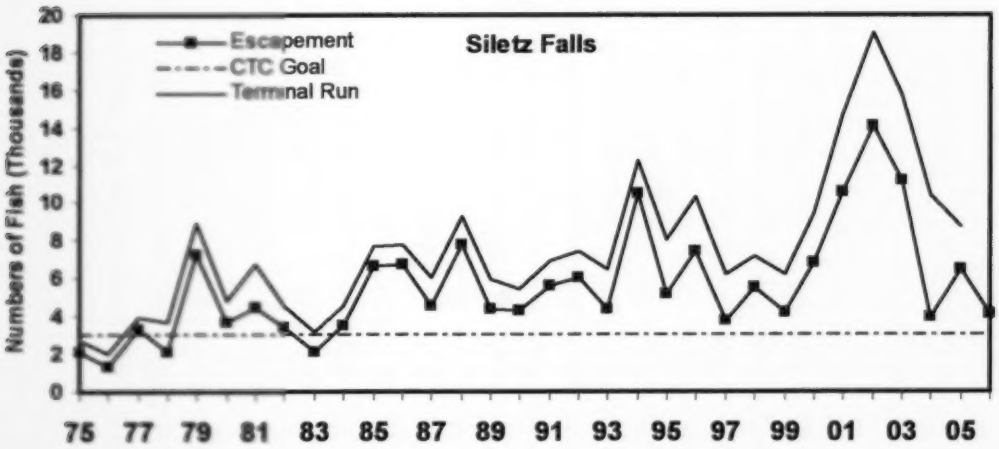
Commentary: Local management agencies use a goal of 4,000 adult Chinook, which includes 2,000 fish above Sherars Falls. This goal is based on average spawning escapement. The 2002 and 2003 escapements of Deschutes fall Chinook were at least 3 times the management goal, based on either the expansion of escapements above Sherars Falls, or the total river mark recapture estimate. They were also the largest escapements since the peak in 1997. The estimated escapement in 2006 was 13,374 Chinook.



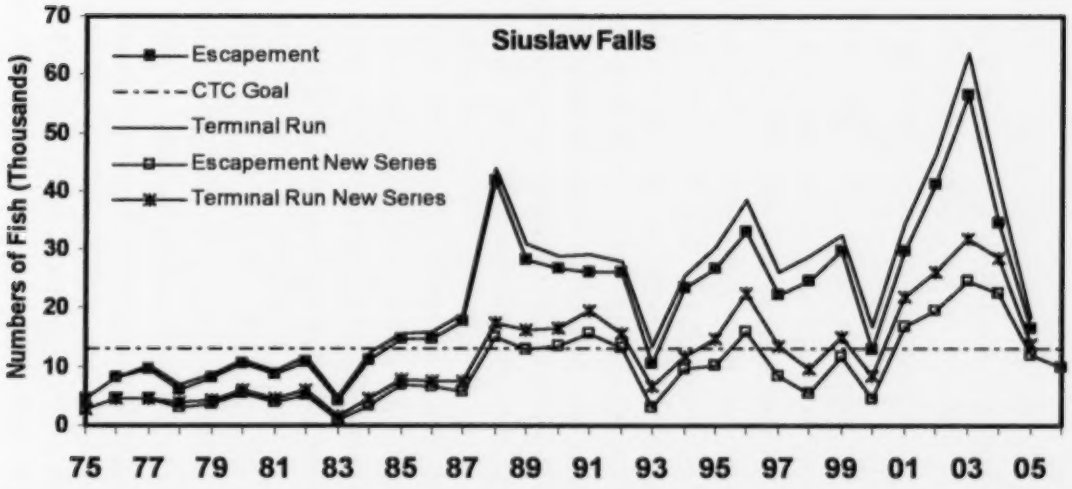
Commentary: Methods used to generate escapement estimates are derived from calibration studies funded through the USCTC-LOA studies conducted in the Nehalem River basin from 2000-2004. The results of these studies indicate that peak counts from "standard" spawner surveys track the true Chinook escapement into the basin relatively well. Standard surveys are defined as those surveys which have historically been conducted by regional staff for 20+ years. Peak count is defined as the largest sum of live Chinook and carcasses observed on a particular day, per mile over a defined survey reach. The Chinook Technical Committee requires that a Coefficient of Variation (CV) of <30% must be achieved in order for an index be used as an estimator of abundance within the Chinook management scheme.

An index value of .0045 with a CV of 31% has been computed from calibration of mark & recaptures estimates to peak counts from 5 standard surveys. Although this index does not meet the precision standard recommended by the Chinook Technical Committee, ODFW believes that this index represents the best available means to estimate spawner escapement in this basin. The North Fork Nehalem sub-basin is not included in this estimate.

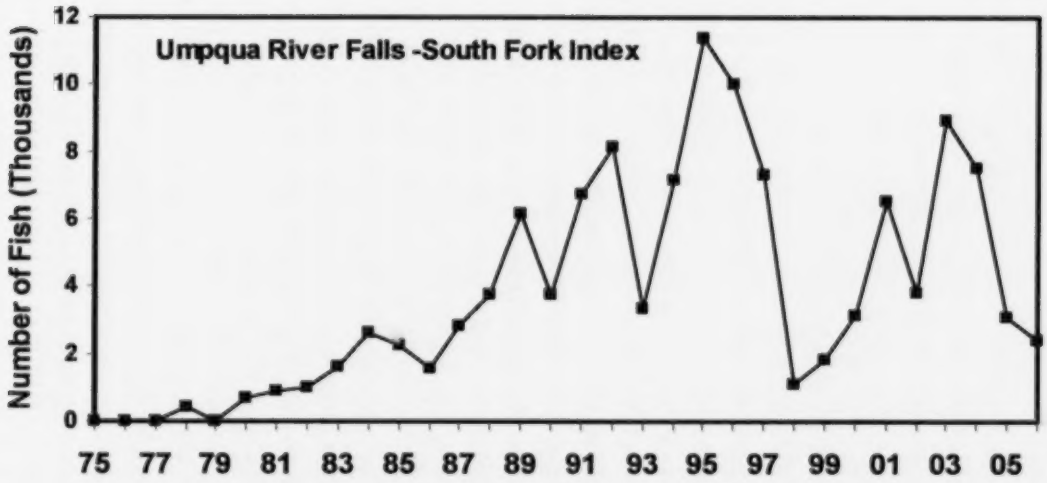
Due to inadequate surveys in the Nehalem basin a re-calibration of four standard surveys was conducted to estimated spawner abundance in 2006. The index for this assessment is .001442 with a CV of 20%. The spawner escapement estimate for the Nehalem Basin (excluding the North Fork) based on this index value was 11,938 fall Chinook. Punch card data used to estimate the recreational sport catch are unavailable for 2006; hence terminal run sizes are not available for this year. Methods directly comparable to those used to generate the agreed to escapement goal for the Nehalem indicate 2006 escapement of 4,711 adult spawners. This is 67% of the current escapement goal.



Commentary: Calibration studies continue through the 2007 spawning year thus traditional methods of escapement estimation remain in place until the Mark-Recapture calibration study is complete. Methods used to generate escapement estimates in this basin have not changed since last report in 2005. The estimate based upon historically produced habitat expansion for 2006 was 4,108 adult fall Chinook salmon. Punch card data used to estimate the recreational sport catch are unavailable for 2006; hence terminal run sizes are not available for this year.



Commentary: The estimated spawner abundance in 2006 was 6,965 adult Chinook. Methods used to generate escapement estimates in this basin are based on five years (2002-2006) of calibrated peak counts on six standard surveys to mark & recapture estimates in the Siuslaw basin. The index value is .00976 with a CV of 23%. Escapement goal estimate analysis was based upon available habitat expansion estimates used in other basins on the Oregon coast which have been obviated through the improvement of estimation techniques based upon Mark-Recapture estimates. Escapement estimates based on these methods indicated escapement below the CTC adopted escapement goal of 12,925 for the past year (6,965 in 2006) however these estimates are not comparable to the currently agreed to escapement goal. Escapement estimates based on methods used to generate the agreed to goal result in an estimated 28,082 adult spawners. Spawner-recruit analysis utilizing the updated data set is planned for the near future to compare between newer escapement estimation (backcast through historical data-sets) and an escapement goal based upon the same data. Punch card data used to estimate the recreational sport catch are unavailable for 2006; hence terminal run sizes are not available for this year.



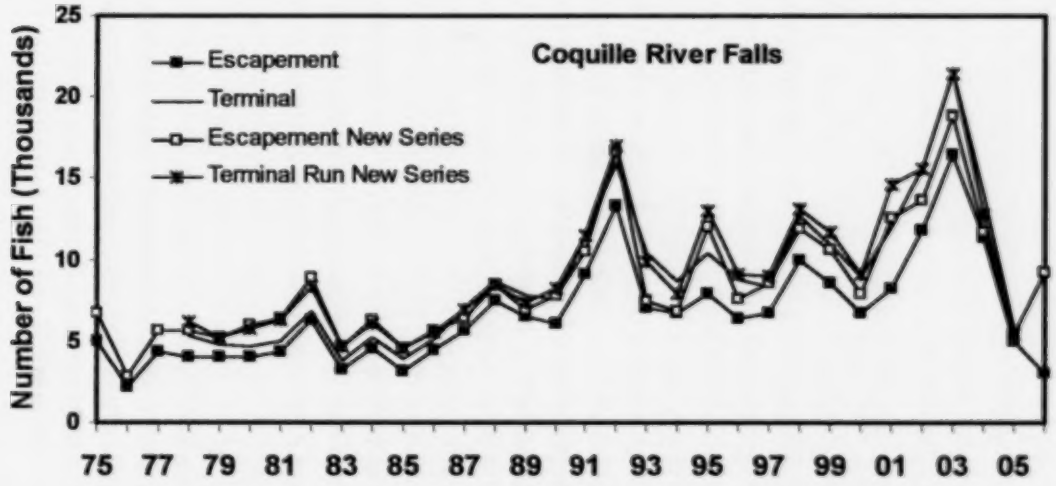
Commentary: Coded-wire tagged fall-run Chinook from the Umpqua River have indicated that they are harvested in PSC fisheries. Four years of USCTC funded research has allowed the calibration of the redd counts to derive a fish per redd expansion factor so that annual escapements estimates can be made. The average expansion factor from these studies is 3.69 fish per redd. The coefficient of variation of the expansion factor was found to be 14%, which shows that the average expansion factor is a reliable statistic to use for annual estimates of escapement. The escapement estimate for 2006 was 2,396 based on redd count expansions.

Indexes of Chinook spawner abundance in the South Umpqua/Cow creek sub-basin were derived from aerial redd count surveys. The aerial surveys are funded by Douglas County and were conducted twice during the spawning season. Aerial redd counts were conducted on the lower 69 miles of the South Umpqua and the lower 60 miles on Cow Creek. These counts cover all mainstem spawning areas for fall Chinook in the South Umpqua Basin. The South Umpqua is broken up into three reaches (Forks to Happy Valley, Happy Valley to Cow Creek, Cow Creek to Milo) and Cow Creek is considered one reach from the confluence with the Umpqua River to Galesville Dam.

The Coastal Chinook Research and Monitoring project was able to provide a calibration of redds to spawner escapement estimate based on the years 1998 through 2003 excluding 2002 when aerial flights were not conducted. The mean number of fish per redd estimated from these five years was 3.4 with a coefficient of variation of 17.8%

Aerial surveys are conducted using a Bell Ranger 3 helicopter and flights are typically scheduled to encompass the peak spawning period. Two biologists simultaneously count redds for each reach using hand tally-counters. At the end of the reach, each biologist records the number of redds identified, and counters are reset for the next reach. The average of the two observers Chinook redd count from reach are determined for each flight, and the index is defined as the sum of the peak counts for each reach between the two flights. Expansions are sometimes made to account for portions of reaches that were not completed due to visibility or mechanical problems.

Terminal run estimation is currently being conducted and will require some measure of data mining in order to reconstruct what the terminal catch has been historically. Preliminary indications are that the terminal catch of South Fork Umpqua Chinook is insubstantial.



Commentary: Analysis funded by the CTC is underway that will provide information to designate Coquille Fall Chinook as an escapement indicator stock for the Mid-Oregon Coast (MOC) Aggregate. Calibrated index of peak counts on standard surveys to a relatively precise mark & and recapture abundance estimates has been selected as an efficient and cost effective means to measure spawner escapement of Chinook salmon for use in PST fisheries management.

The Chinook Technical Committee requires that a Coefficient of Variation (CV) of <30% must be achieved in order for an index be used as an estimator of abundance within the Chinook management scheme. The CV between the qualifying calibration values computed from studies conducted from 2001 through 2004 for the Coquille River basin is 14%, and the average index value of 0.00874. This analysis include eight standard survey conducted annually on a regular basis. One of the surveys was not conducted in 2003 and a running five year average was used to maintain historic consistency. The calibration value is defined as the average peak count per mile of the eight standard surveys divided by the point value of the Petersen estimate. Peak count is defined as the largest sum of live Chinook and carcasses observed on a particular day, per mile over a defined survey reach.

Due to un-foreseen circumstances, not all of the standard surveys were conducted throughout the season; thus for 2006 only one of the standard surveys were used as an index of abundance. Peak counts from Salmon creek (a tributary of the South Fork Coquille) were calibrated for four years (2001-2004) against mark & recapture estimates during the same time frame. An index value of 0.01734 with a coefficient variance of 35% was calculated and assumed to be the best index for estimating Chinook spawner escapement into the Coquille River basin for 2006. Using this calibrated standard survey index; the spawner escapement for 2006 was estimated to be 7,438 adult Chinook.

3 EXPLOITATION RATE ANALYSIS AND MODEL CALIBRATION

3.1 INTRODUCTION

This chapter describes the methods and results of the cohort analysis, used to estimate exploitation rates from CWT data, and the PSC Chinook model calibration. The results of the 2007 preseason calibration (CLB 0705) are based on the exploitation rate analysis using CWT data through 2005, coast-wide data on catch, spawning escapements and age structure through 2006, and forecasts of Chinook returns expected in 2007. This chapter includes:

1) estimated postseason abundance indices for 1979 through 2006 and the preseason projection for 2007 for the AABM fisheries,
2) estimated non-ceiling indices, referred to as the ISBM indices in this report, for 1999 to 2005 and modeled ISBM projections for the 2007 ISBM fisheries,
3) estimated stock composition for 1979 through 2006 and a projection for 2007 for the AABM and other fisheries, and
4) estimated harvest rates (fishery indices) for the AABM fisheries.

Appendix C shows the relationship between the exploitation rate indicator stocks, model stocks, and PST Annex stocks. Appendices D to K present some additional output from the exploitation rate analysis and model calibration beyond the summaries presented in this Chapter. Appendix D provides the time series of ISBM CWT indices, and ISBM model indices from calibration 0705. Appendix E shows the percent distribution of landed catch and total mortality by catch year for exploitation rate indicator stocks. Appendix F has the time series of brood year exploitation rates for the CWT indicator stocks. Appendix G shows the model estimates of stock composition in AABM and other sport and troll fisheries. Appendix H lists the incidental mortality rates used in the CTC model. Appendix I contains the time series of total AIs for the AABM fisheries from calibration 0705, and Appendix J provides the AIs for each of the 30 model stocks for each AABM fishery. Appendix K presents the time series of CWT-based fishery exploitation rate indices by stock, age, and fishery.

3.2 METHODS

A complete description of methods for the exploitation rate analysis and model procedure is reported in TCCHINOOK (05)-2 (CTC 2005b). The exploitation rate assessment is performed through cohort analysis of CWT release and recovery data (CTC 1988). Cohort analysis is the reconstruction of the exploitation history of a given stock and brood year and is used to produce a variety of statistics, including total exploitation rates, age and fishery specific exploitation rates, maturation rates, pre-age 2 recruitment survival indices, and annual distribution of fishery-related mortalities.

Estimates of age and fishery-specific exploitation and maturation rates from the cohort analysis are combined with data on catches, escapements, non-retention, and enhancement to complete the annual calibration of the CTC Model. The calibration procedure estimates pre-age 2 survival to recruitment for the stocks included in the model.

Results from the annual preseason calibration of the Chinook model are used to calculate: 1) AIs for the three AABM fisheries; 2) postseason AIs for the previous year; and 3) preseason and postseason ISBM indices. Projected AIs for 2007 are used to determine the allowable 2007 catch of Treaty Chinook for AABM fisheries. Postseason AIs are used to determine postseason allowable catches and to evaluate compliance for AABM fisheries. For the ISBM fisheries, the Agreement specifies that Canada and the United States will reduce the exploitation rate from the 1979–1982 base period by 36.5% and 40.0%, respectively, on stocks that have not achieved their CTC agreed escapement goals. The ISBM index is used to estimate the annual reduction in exploitation rates relative to the base period. Postseason ISBM indices for 2005 are computed using results of the exploitation rate analysis, based on CWTs. Forecasts of the 2007 ISBM indices are computed using the CTC model. The Agreement specifies that the postseason ISBM indices estimated through exploitation rate analysis of CWT recoveries will be used to assess the ISBM index.

3.3 EXPLOITATION RATE ASSESSMENT (THROUGH CALENDAR YEAR 2004)

The CTC currently monitors 39 exploitation rate indicator stocks that are coded-wire tagged, but only 36 were used for analyses in this chapter (Table 3.1). An exploitation rate indicator stock is not used in the exploitation rate analysis if the number of CWT recoveries is very limited (minimum of 35 estimated recoveries for a given stock and age combination) or there is no quantitative estimate of tags in the spawning escapement (see footnotes in Table 3.2). Indicator stocks used for exploitation rate analysis and the type of analysis performed for each are shown in Table 3.2. The relationship between the exploitation rate indicator stocks, model stocks, and PST Annex stocks are shown in Appendix C. Extrapolation of results to similar stocks and/or generalizations about fishery impacts will only be appropriate to the extent that the exploitation rate indicator stocks are representative of the stocks groups they are intended to represent.

Table 3.1. The 39 exploitation rate indicator stocks monitored by the CTC, their location, run type, and smolt age. Stocks in bold, italic text were not used in the exploitation rate analysis.

Area	Exploitation Rate Indicator Stocks	Location	Run Type	Smolt Age
S E Alaska	Alaska Spring	Southeast Alaska	Spring	Age 1
British Columbia	Kitsumkalum	North/Central BC	Summer	Age 1
	Atnarko [1]	***North/Central BC***	***Spring/Summer***	***Age 0***
	Kitimat River [1]	***North/Central BC***	***Summer***	***Age 0***
	Robertson Creek	WCVI	Fall	Age 0
	Quinsam	Strait of Georgia	Fall	Age 0
	Puntledge	Strait of Georgia	Summer	Age 0
	Big Qualicum	Strait of Georgia	Fall	Age 0
	Cowichan	Strait of Georgia	Fall	Age 0
	Chehalis (Harrison Stock) [1]	***Lower Fraser River***	***Fall***	***Age 0***
	Chilliwack (Harrison Stock)	Lower Fraser River	Fall	Age 0
Puget Sound	Nooksack Spring Fingerling	North Puget Sound	Spring	Age 0
	Nooksack Spring Yearling	North Puget Sound	Spring	Age 1
	Skagit Spring Fingerling	Central Puget Sound	Spring	Age 0
	Skagit Spring Yearling	Central Puget Sound	Spring	Age 1
	Samish Fall Fingerling	North Puget Sound	Summer/Fall	Age 0
	Skagit Summer Fingerling	Central Puget Sound	Summer	Age 0
	Stillaguamish Summer Fingerling	Central Puget Sound	Summer/Fall	Age 0
	Nisqually Fall Fingerling	Central Puget Sound	Summer/Fall	Age 0
	University of Washington Accelerated	Central Puget Sound	Summer/Fall	Age 0
	George Adams Fall Fingerling	Hood Canal	Summer/Fall	Age 0
	South Puget Sound Fall Fingerling	South Puget Sound	Summer/Fall	Age 0
	South Puget Sound Fall Yearling	South Puget Sound	Summer/Fall	Age 1
	Squaxin Pens Fall Yearling	South Puget Sound	Summer/Fall	Age 1
	White River Spring Yearling	South Puget Sound	Spring	Age 1
Washington Coast /Juan de Fuca	Elwha Fall Fingerling	Strait of Juan de Fuca	Summer/Fall	Age 0
	Hoko Fall Fingerling	Strait of Juan de Fuca	Summer/Fall	Age 0
	Sooes Fall Fingerling	North Wash Coast	Fall	Age 0
	Quoets Fall Fingerling	North Wash Coast	Fall	Age 0
Columbia River	Willamette Spring	Lower Columbia R	Spring	Age 1
	Columbia Summers	Columbia R (WA)	Summer	Age 1
	Cowlitz Tule	Columbia R (WA)	Fall Tule	Age 0
	Spring Creek Tule	Columbia R (WA)	Fall Tule	Age 0
	Columbia Lower River Hatchery	Columbia River (OR)	Fall Tule	Age 0
	Columbia Upriver Bright	Upper Columbia R	Fall Bright	Age 0
	Hanford Wild	Upper Columbia R	Fall Bright	Age 0
	[illegible] Ferry [2]	Snake River	Fall Bright	Age 0
	[illegible] River Wild	Lower Columbia R	Fall Bright	Age 0
Oregon Coast	Salmon River	North Oregon Coast	Fall	Age 0

[1] These stocks are CWT-tagged, but there is no reliable quantitative CWT escapement data and CWT data presented for these stocks is useful for distribution of harvest and mortalities only

[2] Subyearlings have been CWT-tagged since brood year 1986, except for brood years 1993 through 1997

Table 3.2. The 36 CWT exploitation rate indicator stocks used in the exploitation rate analysis and the data derived from them: fishery, ISBM and survival indices, brood exploitation rates (Brood Exp), and stock catch distribution (Dist) with quantitative escapement estimates (Esc) and tagging during the base period years 1979–1982.

Exploitation Rate Indicator Stocks	Fishery Index	ISBM Index	Brood[1] Exp	Survival Index	Dist	Esc	Base Tagging
Alaska Spring	yes	—	Total	yes	yes	yes	yes
Kitsumkalum	—	—	Total	yes	yes	yes	—
Robertson Creek	yes	yes	Ocean[1]	yes	yes	yes	yes
Quinsam	yes	yes	Total	yes	yes	yes	yes
Puntledge	yes	—	Total	yes	yes	yes	yes
Big Qualicum	yes	yes	Total	yes	yes	yes	yes
Cowichan	yes	yes	Total	yes	yes	yes	—
Chilliwack (Harrison Fall Stock)	—	yes	Total	yes	yes	yes	—
Nooksack Spring Fingerling	—	—	[4]	—	yes	yes	—
Nooksack Spring Yearling	—	yes	[4]	yes	yes	yes[3]	—
Skagit Spring Fingerling	—	—	Ocean	—	yes	yes	—
Skagit Spring Yearling	—	—	Ocean	yes	yes	yes[3]	—
Samish Fall Fingerling	yes	—	Ocean	yes	yes	yes[3]	yes
Skagit Summer Fingerling	—	—	Ocean	—	yes	yes	—
Stillaguamish Summer Fingerling	—	yes	[4]	—	yes	—	—
Snoqualmie Fall Fingerling	—	—	[4]	—	yes	—	yes
University of Washington Accelerated	yes	[2]	[2]	—	yes	yes[3]	yes
George Adams Fall Fingerling	yes	[2]	[2]	yes	yes	yes[3]	yes
South Puget Sound Fall Fingerling	yes	yes	Ocean	yes	yes	yes[3]	yes
South Puget Sound Fall Yearling	yes	[2]	[2]	yes	yes	yes[3]	yes
Squaxin Pens Fall Yearling	—	[2]	[2]	yes	yes	yes[3]	—
White River Spring Yearling	—	—	[4]	yes	yes	yes[3]	yes
Elwha Fall Fingerling	—	—	[4]	yes	yes	—	—
Hoko Fall Fingerling	—	—	Ocean	yes	yes	yes	—
Sooes Fall Fingerling	—	—	Ocean	yes	yes	yes	—
Quarts Fall Fingerling	—	yes	[4]	yes	yes	—	yes
Willamette Spring	yes	—	Ocean	yes	yes	yes	yes
Columbia Summers	yes	yes	Total	yes	yes	yes	—
Cowlitz Tule	yes	—	Ocean	yes	yes	yes	yes
Spring Creek Tule	yes	—	[2]	yes	yes	yes	—
Columbia Lower River Hatchery	yes	—	[2]	yes	yes	yes	yes
Upriver Bright	yes	yes	Total	yes	yes	yes	yes
Hanford Wild	—	—	Total	yes	yes	yes	—
Lyons Ferry	—	—	Total	yes	yes	yes	—
Lewis River Wild	yes	yes	Total	yes	yes	yes	yes
Salmon River	yes	yes	Ocean	yes	yes	yes	yes

[1] For stocks of hatchery origin and subject to terminal fisheries directed at harvesting surplus hatchery production, ocean fisheries do not include terminal net fisheries. Otherwise, total fishery includes terminal net fisheries.
[2] Hatchery stock not used to represent naturally spawning stock.
[3] Only hatchery mark recoveries are included in escapement.
[4] Insufficient escapement data for exploitation rate analysis.

3.4 MODEL OUTPUT

3.4.1 AABM Abundance Indices and Associated Catches

Beginning with the 1999 fishing season, the Agreement specified that the AABM fisheries are to be managed through the use of the preseason AIs, where specific allowable harvest corresponds to a given AI for each fishery. The preseason AIs that were used to establish harvest management targets are listed in Table 3.3. The 2007 preseason AI for the SEAK troll fishery is 1.60, for the NBC troll fishery it is 1.35, and for the WCVI troll fishery is 0.67. In-season predictors may also be used for in-season adjustments to the preseason AI's for the SEAK troll fishery. However, the in-season AI has not provided a reliable estimate of the postseason AI due to its reliance on the preseason AI in the calculations and has not been used for in-season management action since 2001.

The postseason AI is considered a more accurate estimate of the abundance index for the AABM fisheries, and is used to compute a final allowable catch for each fishery to evaluate overage or underage of the landed catch relative to the harvest objective. Postseason AIs for 1999-2006 are also listed in Table 3.3.

Table 3.3. Abundance indices for 1999 to 2007 for the SEAK, NBC, and WCVI troll fisheries.

	Calibration	SEAK			NBC		WCVI	
Year	Preseason/ Postseason	Preseason	Inseason	Postseason	Preseason	Postseason	Preseason	Postseason
1999	9902 / 0107	1.15	1.15	1.12	1.12	0.97	0.60	0.50
2000	0021 / 0107	1.14	1.14	1.10	1.00	0.95	0.54	0.47
2001	0107 / 0206	1.14	1.10	1.29	1.02	1.22	0.66	0.68
2002	0206 / 0308	1.74	1.73	1.82	1.45	1.63	0.95	0.92
2003	0308 / 0404	1.79	1.76	2.17	1.48	1.90	0.85	1.10
2004	0404 / 0506	1.88	1.88	2.06	1.67	1.83	0.90	0.98
2005	0506 / 0604	2.05	2.04	1.90	1.69	1.65	0.88	0.84
2006	0604 / 0705	1.69	1.69	1.73	1.53	1.50	0.75	0.68
2007	0705	1.60			1.35		0.67	

The Agreement specifies the allowable catch for various values of the AI for each fishery. The allowable treaty catch by fishery and year based on pre- and postseason AIs and the actual (observed) catches are given in Table 3.4 and are shown in Figures 3.1 through 3.3; the solid line represents the relationship between AIs and allowable catch under Table 1 of the annex.

Table 3.4. Observed catches and postseason allowable catches for 1999 to 2006, and preseason allowable catches for 1999 to 2007, for AABM fisheries.

	PST Treaty Allowable and Observed Catches								
	SEAK (T, N, S) [1]			NBC (T, S)			WCVI (T, S)		
Year	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch	Pre-season Allowable Catch	Post-season Allowable Catch	Observed Catch
1999	192,800	184,200	198,842	145,600	126,100	86,726	128,300	107,000	36,413
2000	189,900	178,500	186,493	130,000	123,500	31,900	115,500	86,200	101,438
2001	189,900	250,300	186,919	132,600	158,900	43,500	141,200	145,500	117,670
2002	356,500	371,900	357,133	192,700	237,800	150,137	203,200	196,800	165,036
2003	366,100	439,600	380,152	197,100	277,200	191,657	181,800	268,900	175,821
2004	383,500	418,300	428,773 433,446 [2]	243,600	267,000	241,508	192,500	209,600	216,624
2005	416,400	387,400	391,507	246,600	240,700	243,606	188,200	179,700	202,662
2006	346,800	354,500	359,184	223,200	200,000	247,337	160,400	145,500	146,883
2007	329,400			178,000			143,300		

[1] Nomenclature is T for troll, N for net, and S for sport.

[2] The lower value results from subtracting a terminal exclusion catch for the Stikine River in 2004, which is in dispute.

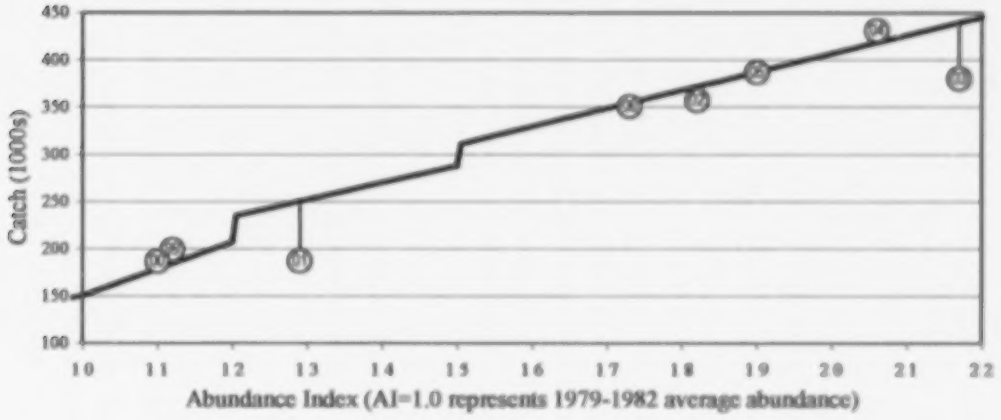


Figure 3.1. Postseason catches (open circles) versus postseason allowable catches (line) in the SEAK AABM fishery, 1999-2006.

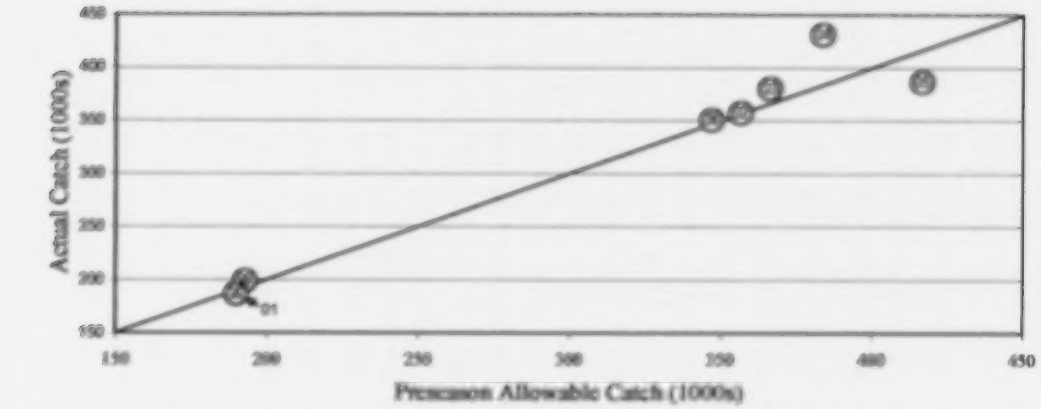


Figure 3.2. Postseason catches (open circles) versus preseason allowable catches (line) in the SEAK AABM fishery, 1999-2006.

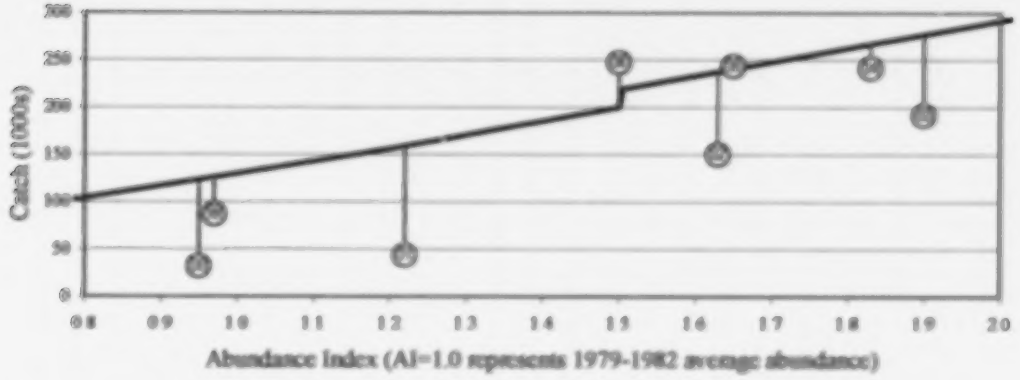


Figure 3.3. Postseason catches (open circles) versus postseason allowable catches (line) in Northern British Columbia troll and Queen Charlotte Islands recreational AABM fisheries, 1999-2005.

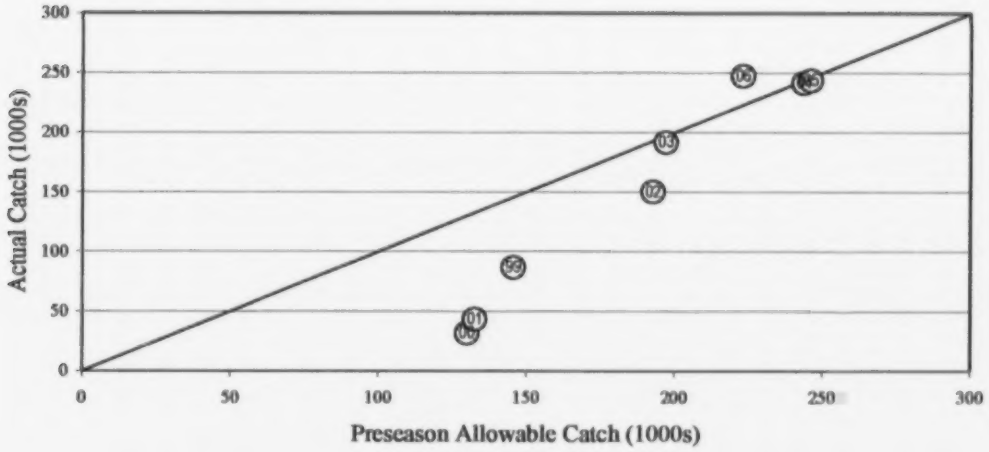


Figure 3.4. Postseason catches (open circles) versus preseason allowable catches (line) in Northern British Columbia troll and Queen Charlotte Islands recreational AABM fisheries, 1999-2005.

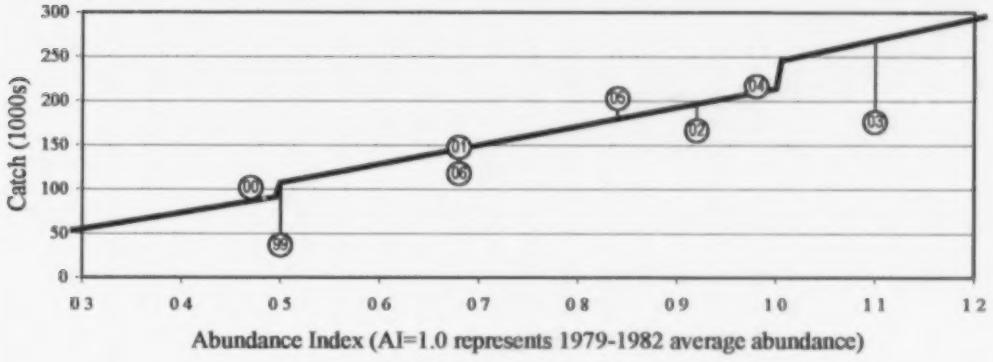


Figure 3.5. Postseason catches (open circles) versus postseason allowable catches (line) in West Coast Vancouver Island AABM fisheries, 1999-2005.

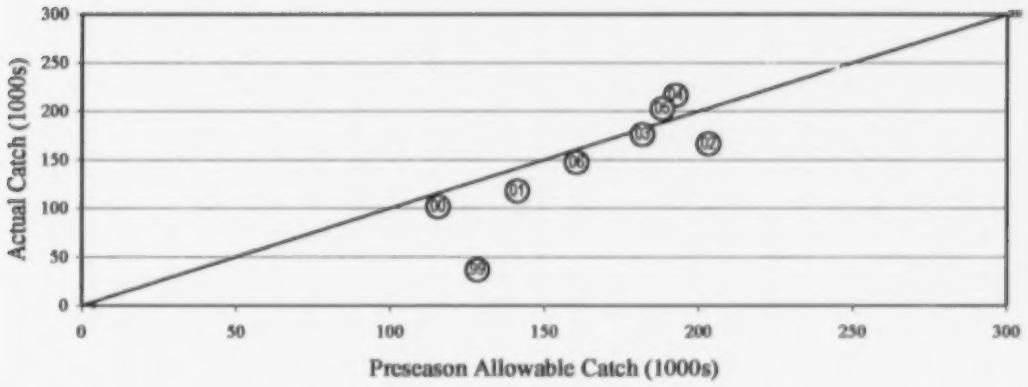


Figure 3.6. Postseason catches (open circles) versus preseason allowable catches (line) in West Coast Vancouver Island AABM fisheries, 1999-2005.

3.4.1.1 Model estimate of stock composition of AABM fisheries, 1979-2007

There are 30 model stocks (Appendix C). However, the majority of model catches in AABM fisheries are often composed of a few smaller set of major stocks (Figures 3.7 through 3.9). The relative abundance for each major stock is shown in those graphs from CLB 0705. In general, postseason AIs had a peak during the late 1980s and another in 2003 and 2004. Note that Figures 3.7 through 3.9 have projections of stock composition for 2008.

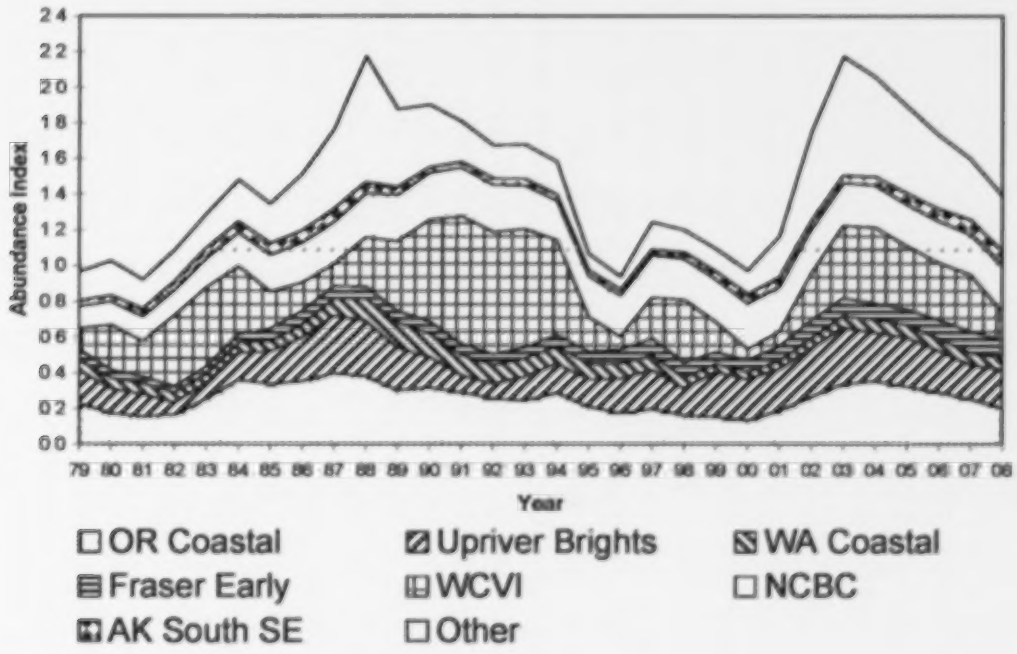


Figure 3.7. Total abundance indices for the SEAK troll fishery with annual stock composition indicated by abundance indices for major model stocks from CLB 0705.

The major model stocks contributing to the SEAK AIs are: WCVI Natural and Hatchery, Upriver Brights, North/Central BC, and Oregon Coastal (Figure 3.7). The "other" category is primarily driven by Upper Georgia Strait, Columbia River Summers, Mid Columbia River Brights and Fraser Early.

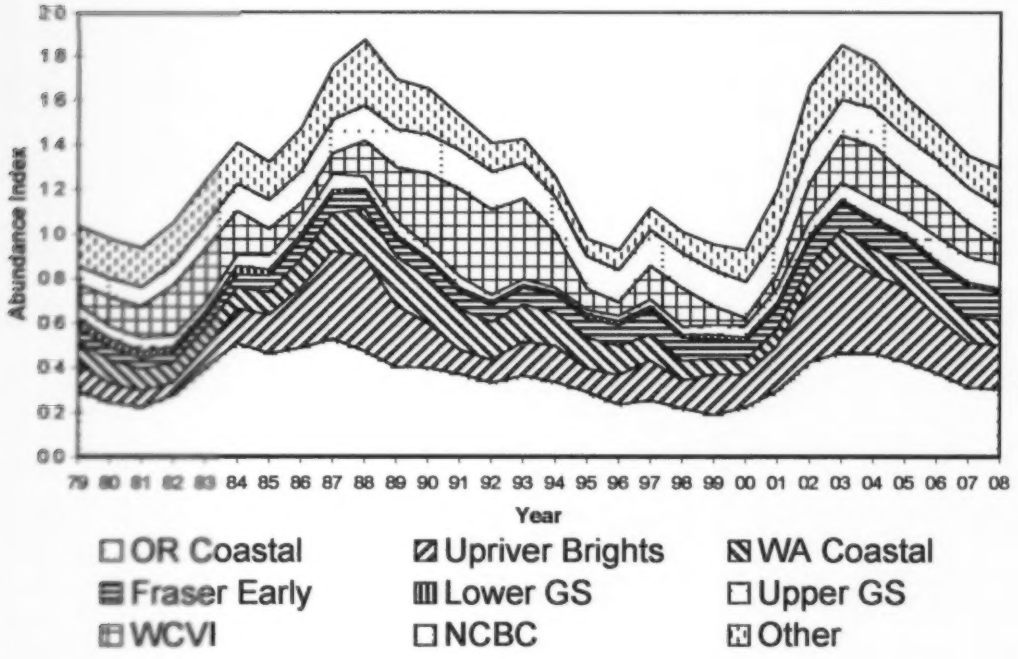


Figure 3.8. Total abundance indices for the Northern BC troll fishery with annual stock composition indicated by abundance indices for major model stocks from CLB 0705.

The major model stock groups contributing to the NBC AABM fishery AIs are: WCVI Natural and Hatchery, Upriver Brights, Oregon Coastal, North/Central BC, and Washington Coastal Wild and Hatchery (Figure 3.8). The "other" category is primarily driven by Columbia River Summers, Mid Columbia River Brights and Willamette Springs.

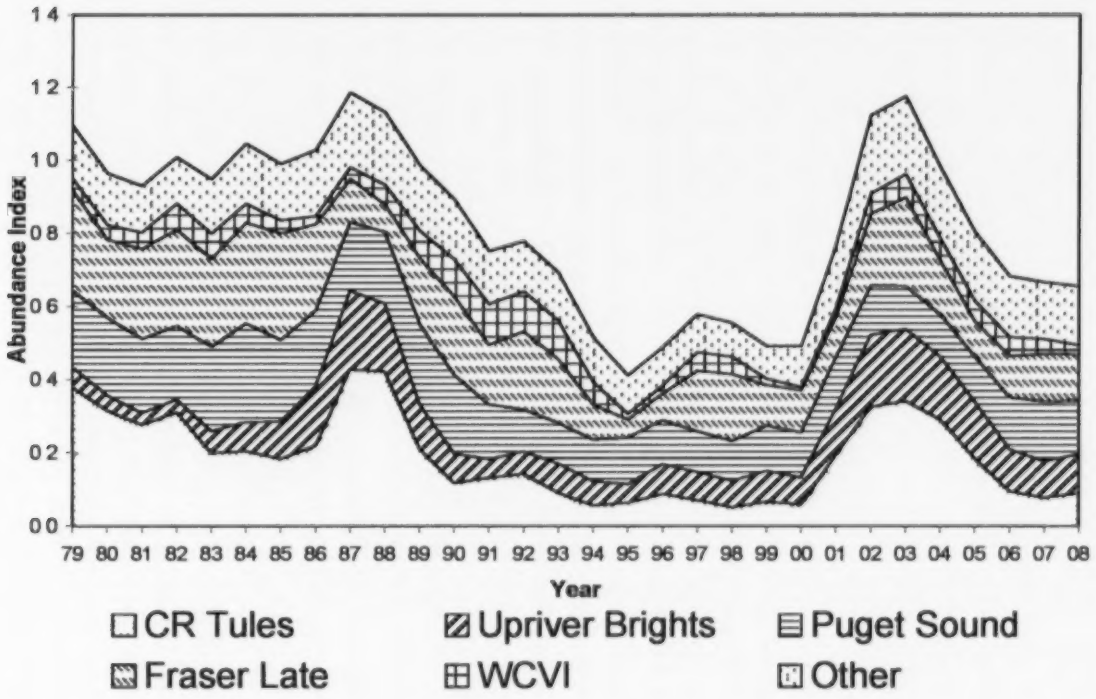


Figure 3.9. Total abundance indices for the WCVI troll fishery with annual stock composition indicated by abundance indices for major model stocks from CLB 0705.

The major model stock groups in the WCVI fishery are: Fraser Late, Puget Sound, Upriver Brights, and Columbia River Tules (Figure 3.9). The "Other" category is comprised primarily of Columbia River Summers and Oregon Coastal fish.

3.4.2 Overages and Underages

Until an approach for full implementation of overage/underage provisions has been developed and accepted by the PSC, the Commissioners have instructed the CTC to track and report overages and underages relative to agreed-upon harvest objectives.

3.4.2.1 AABM Fisheries

Table 3.5 shows the differences between the postseason allowable catches and the observed catches in AABM fisheries for 1999–2004, and the cumulative differential for those years. All three AABM fisheries have cumulative underages. In SEAK, observed catches have been below final allowable catches for three of the eight years; the cumulative differential is –3.7% or -3.5%. In NBC, observed catches have been below the final allowable catches in six of the eight years; the cumulative differential is –24.2%. In WCVI, observed catches have been below allowable catches in four of the seven years; the cumulative differential is –13.0%.

Table 3.5. Deviations in numbers of Chinook salmon and percentages from catch targets derived from the first postseason AI (Table 3.2) for Pacific Salmon Treaty AABM fisheries in 1999 to 2006.

Year	SEAK		NBC		WCVI	
	Number of Fish	Percent Difference	Number of Fish	Percent Difference	Number of Fish	Percent Difference
1999	+14,642	+7.9%	-39,374	-31.2%	-70,587	-66.0%
2000	+7,993	+4.5%	-91,600	-74.2%	+15,238	+17.7%
2001	-63,381	-25.3%	-115,400	-72.6%	-27,830	-19.1%
2002	-14,767	-4.0%	-87,663	-36.9%	-31,764	-16.1%
2003	-59,448	-13.5%	-85,543	-30.9%	-93,079	-34.6%
2004	+10,473 +15,146	+2.5% +3.6%	-25,492	-9.5%	+7,024	+3.35%
2005	+4,107	-0.2%	+2,906	+1.2%	+22,962	+12.8%
2006	+4,684	-1.1%	+47,337	+23.7%	+1,383	+0.95%
Cum.	-95,697 -91,024[1]	-3.7% -3.5%	-398,848	-24.2%	-174,339	-13.0%

[1] The lower value results from subtracting a terminal exclusion catch for the Stikine River in 2004, which is in dispute.

3.4.2.2 ISBM Indices by Stock

For ISBM fisheries, the Agreement specifies that Canada and the United States will reduce base period exploitation rates on specified stocks by 36.5% and 40%, equivalent to ISBM indices of 63.5% and 60% percent, respectively. This requirement is referred to as the 'general obligation' and does not apply to stocks that achieve their CTC agreed escapement goal. Estimated ISBM fishery indices are shown in Table 3.6 for Canadian fisheries and Table 3.7 for U.S. fisheries. Both tables present CWT-based indices for 2005, and Chinook model-based predicted indices for 2007. The agreement specifies that the indices for postseason assessment be assessed using the CWT-based estimates, 2005 is the most recent analysis available. CWT-based indices for 2001-2005 and model-based indices for 2001-2007 are presented in Appendix D.

3.4.2.2.1 CWT-based Indices in 2005

Canadian ISBM indices from the CWT-based estimates for 2005 were reduced more than required under the agreement for five of the six CWT indices which could be calculated, the exception being WCVI Falls (Table 3.6). Several inconsistencies were identified in the way these indices had been computed in the past, as noted in the footnotes 4-9 in Table 3.6. Most of them were inconsistencies between the way indices had been calculated by the model versus in the CWT analysis. However, in the case of Lower Georgia Strait, Nanaimo was dropped from the CWT-based index because of concern about the adequacy of base-period data. In addition, Nanaimo and Cowichan stocks are no longer reported separately in the model-based index because there is no way to split the two stocks in the base period.

Four of the 16 U.S. ISBM indices for the Coded Wire Tag (CWT) based estimates for 2005 were reduced more than required. Of the 12 U.S. CWT-based ISBM indices that exceeded 0.60, ten (Upriver Brights, Quillayute, Queets, Hoh, Lewis, Mid-Columbia Summers, Nehalem, Siletz, Siuslaw and Cowichan) have agreed escapement goals and all but the Cowichan stock exceeded their goals in 2005. Figures 3.10 and 3.11 show the historical ISBM indices based on CWT recoveries for 1999-2004.

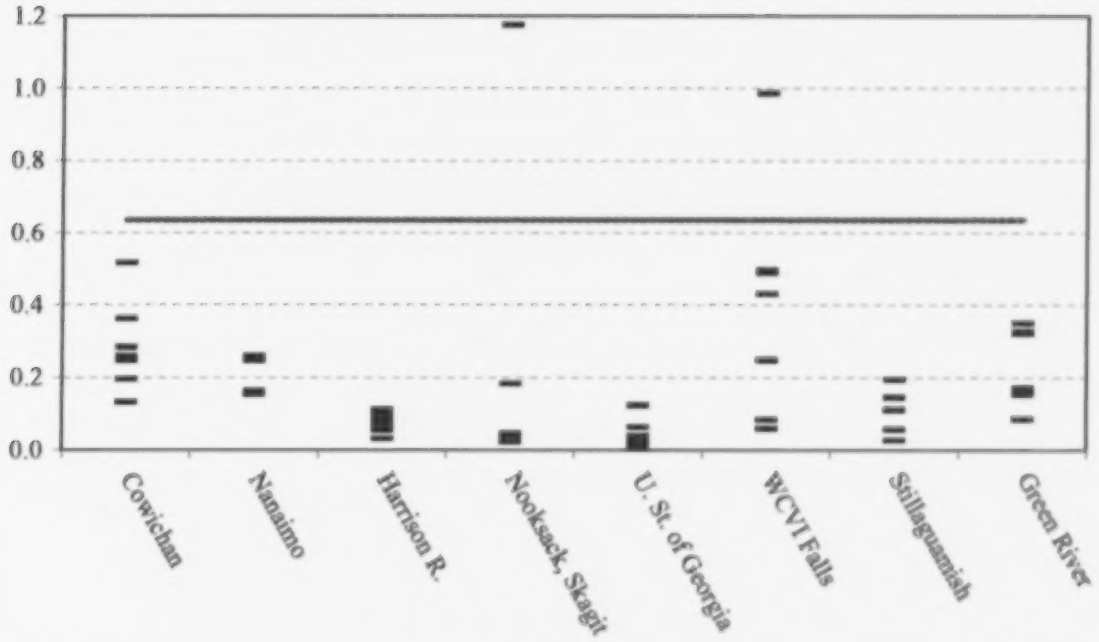


Figure 3.10. ISBM indices for Canadian fisheries for 1999-2005. The solid horizontal line is an index value of 0.635.

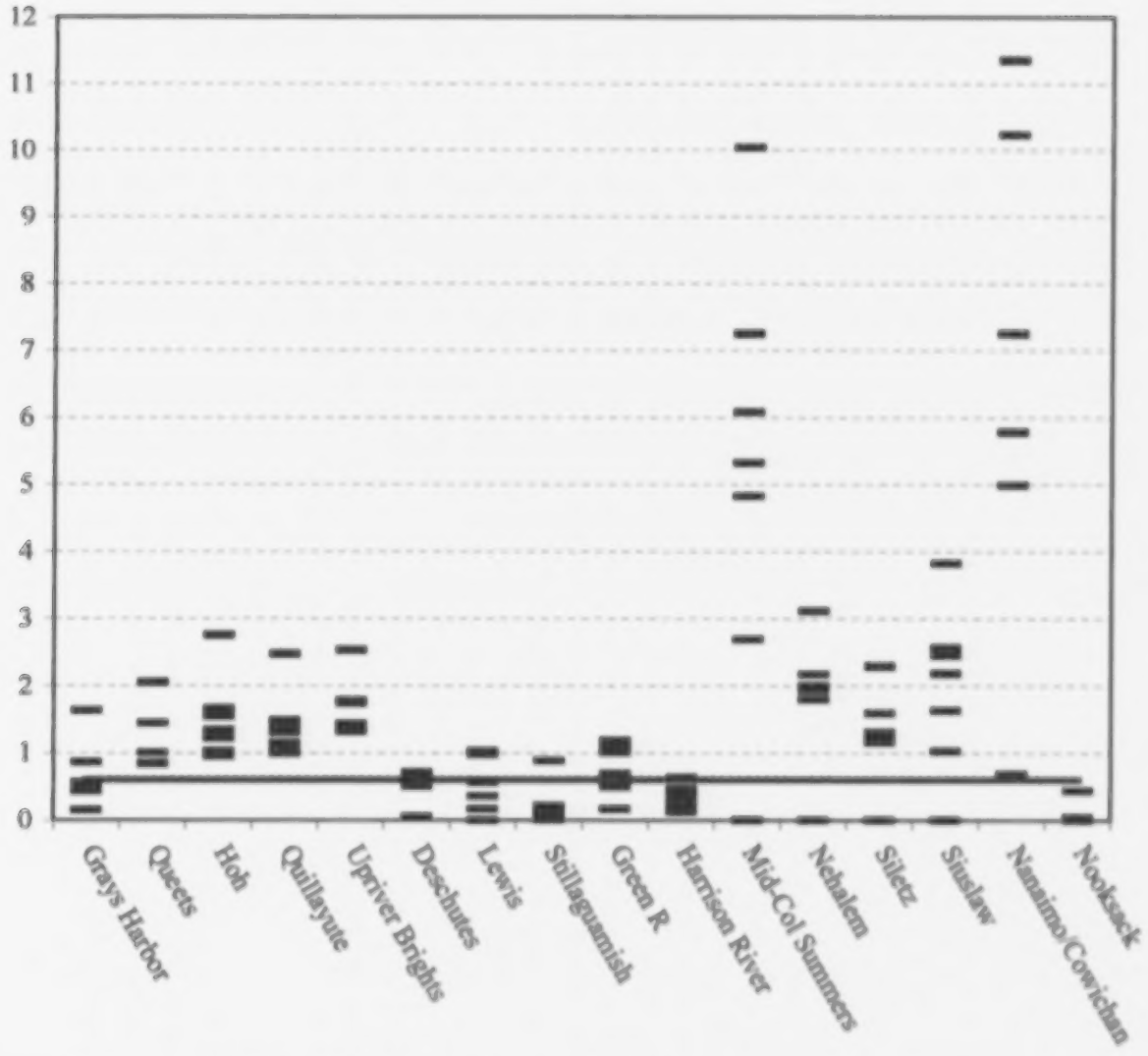


Figure 3.11. ISBM indices for U.S. fisheries for 1999-2005.

3.4.2.2.2 Predicted ISBM Indices for 2007

Model projected indices (Table 3.6) show that the Canadian ISBM indices are expected to be below 0.635 for all Canadian stocks. Canadian indices are projected to be above 0.635 for Puget Sound stocks and below 0.635 for other U.S. stocks. In the southern U.S. fisheries (Table 3.7) nine stocks are projected to have ISBM index values over 0.60, all of which have agreed escapement goals and have been meeting these goals.

Table 3.6. Canadian 2004 ISBM indices based on CWT and the 2006 indices predicted from the PSC Chinook Model.

		Canadian ISBM Indices	
Stock Group	**Escapement Indicator Stock**	**CWT Indices for 2005**	**Model Indices for 2007**
Lower Strait of Georgia	Cowichan Nanaimo	0.132 [4] NA [4,5]	0.240 [6]
Fraser Late	Harrison River [2]	0.058 [7]	0.211
North Puget Sound Natural Springs	Nooksack Skagit	NA NA	0.563 0.563
Upper Strait of Georgia	Klinaklini, Kakweikan, Wakeman, Kingcome, Nimpkish	0.028	0.146
Fraser Early (spring and summers)	Upper Fraser, Mid Fraser, Thompson	NA	0.159
West Coast Vancouver Island Falls	WCVI (Artlish, Burman, Kaouk, Tahsis, Tashish, Marble)	0.986 [8]	0.133
Puget Sound Natural Summer / Falls	Skagit Stillaguamish Snohomish Lake Washington Green River	NA 0.057 NA NA 0.085	0.718 0.821 0.736 0.735 [9] 0.752 [9]
North / Central B. C.	Yakoun, Nass, Skeena, Area 8	NA	0.202
Washington Coastal Fall Naturals [3]	Hoko, Grays Harbor, Queets [2], Hoh [2], Quillayute [2]	NA	0.194
Columbia River Falls [3]	Upriver Brights [2] Deschutes Lewis [2]	NA NA NA	0.129 0.129 0.030
Columbia R Summers [3]	Mid-Columbia Summers [2]	NA	0.119
Far North Migrating OR Coastal Falls [3]	Nehalem [2], Siletz [2], Siuslaw [2]	NA	0.078

[1] Not available (NA) because of insufficient data (lack of stock specific tag codes, base period CWT recoveries, etc).
[2] Stock or stock group with a CTC agreed escapement goal.
[3] Stock group listed in Annex 4, Chapter 3, Attachment V.
[4] An inconsistency was discovered between the approaches used to calculate the model-based and CWT-based indices. The former included harvest rates for terminal sport while the latter did not. Terminal sport harvest rates are now included in the calculation of both indices. Further review is yet required to determine whether the base period terminal sport harvest rates obtained from analyses of Big Qualicum CWT recoveries adequately represent impacts that would have occurred on Cowichan Chinook.
[5] Several problems have been identified in the approach previously used to calculate the CWT-based indices for Nanaimo Chinook. Until these problems are resolved, indices for this stock will not be reported.
[6] Although model-based indices were previously calculated separately for Cowichan and Nanaimo, these did not adequately represent impacts on either LGS stock because the model-based data represent an aggregate of the two

stocks and methods do not currently exist to correctly disaggregate these data for calculation of the ISBM values. Until such methods are developed, a single index value only will be reported representing the aggregate.

[7] The terminal sport harvest rates for Chilliwack Hatchery Chinook, the indicator stock, were removed from the calculation for the Harrison River naturals because sport harvest has been essentially zero on the natural population.

[8] An inconsistency was discovered between the approaches used to calculate the model-based and CWT-based indices. The former included harvest rates for terminal sport while the latter did not. Terminal sport harvest rates are now included in the calculation of both indices. A more extended review of the indices for WCVI Chinook will be carried out to determine whether they adequately represent impacts on the WCVI wild aggregate.

[9] For Canadian ISBM fisheries, Lake Washington and Green the same distribution and Index value are assumed.

Table 3.7. U.S. 2004 ISBM indices based on CWT and the 2006 indices predicted from the PSC Chinook Model. Order of the stock groups correspond to Annex 4, Chapter 3, Attachment V of the PST 1999 Revised Annexes.

		U.S. ISBM Indices	
Stock Group	**Escapement Indicator Stock**	**CWT Indices for 2005**	**Model Indices for 2007**
Washington Coastal Fall Naturals	Hoko	NA [1]	0.401
	Grays Harbor	0.560	0.504
	Queets [4]	2.050	1.014
	Hoh [4]	1.030	1.111
	Quillayute [4]	1.030	0.883
Columbia River Falls	Upriver Brights [4]	1.780	0.726
	Deschutes	0.670	0.493
	Lewis [4]	0.980	1.466
Puget Sound Natural Summer / Falls	Skagit	NA	0.325
	Stillaguamish	0.220	0.152
	Snohomish	NA	0.138
	Lake Washington	NA	0.391
	Green R	0.170	0.278
Fraser Late	Harrison River [4]	0.240	0.563
Columbia R Summers	Mid-Columbia Summers [4]	6.080	0.943
Far North Migrating OR Coastal Falls	Nehalem [4]	2.000	2.183
	Siletz [4]	1.190	1.399
	Siuslaw [4]	1.630	1.241
North Puget Sound Natural Springs	Nooksack	NA	NA
	Skagit	NA	NA
Lower Strait of Georgia [3]	Cowichan,	10.230	0.288
	Nanaimo	10.230	0. 288
Upper Strait of Georgia [3]	Klinaklini, Kakweikan, Wakeman, Kingcome, Nimpkish	NA	NC [2]
Fraser Early (spring and summers) [7]	Upper Fraser, Mid Fraser, Thompson	NA	0.219
West Coast Vancouver Island Falls [3]	WCVI (Artlish, Burman, Kauok, Tahsis, Tashish, Marble)	NA	0.311
North / Central B. C. [3]	Yakoun, Nass, Skeena, Area 8	NA	NC

[1] Not available (NA) because of insufficient data (lack of stock specific tag codes, base period CWT recoveries, etc).

[2] NC means that the current model assumes the stock is not caught in U.S. ISBM fisheries.

[3] Stock group listed in Annex 4, Chapter 3, Attachment IV.

[4] Stock with a CTC agreed escapement goal.

3.5 MODEL CALIBRATION EVALUATION

Previous reports included evaluations of model performance for the most current model year, including comparisons of model estimates of catch and escapement/terminal run sizes to actual estimates of catch and escapement/terminal run size. This year, the model catches and stock escapements or terminal run sizes estimated by CLB 0705 were evaluated as were other aspects of the calibration. The calibration was distributed to the CTC membership for review and subsequently approved. Correlations between model and CWT fishery indices are normally presented. However, while these comparisons were made as part of the normal calibration checking process, the results are not presented in this report.

Fishery mortality indices generated by CLB 0705 can be compared to the CWT-based exploitation rate analysis. Model and CWT-based fishery mortality indices use the same equation, but the former are derived from model estimates of catch for all model stocks instead of CWT recovery data from specific exploitation rate indicator stocks. The CWT fishery mortality indices are considered to be the most accurate. Two types of fishery indices are presented; reported catch and total mortality. In general, the model results are closely associated with the CWT-based indices and changes in fishery exploitation rates as indicated in Figures 3.12 through 3.17. The SEAK fishery mortality index from the model closely follows the trend of the CWT derived estimate from 1979 through 1989 for both landed catch and total mortality (Figures 3.9 and 3.10). Between 1989 and 2000, the model estimate of both landed catch and total mortality indices is less than the CWT-derived estimate for most years but since 2001, the model estimate is noticeably higher. Since 1990, the model estimates also show less variability compared to the CWT-derived indices.

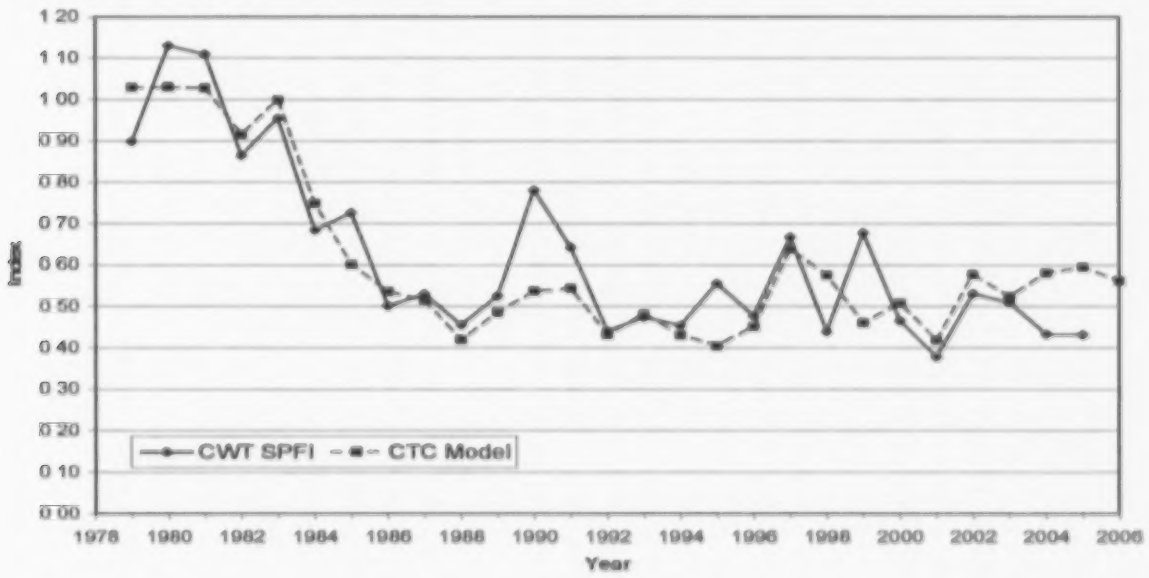


Figure 3.12. Estimated CWT (through 2005) and model landed catch fishery indices (through 2006) for the SEAK troll fishery.

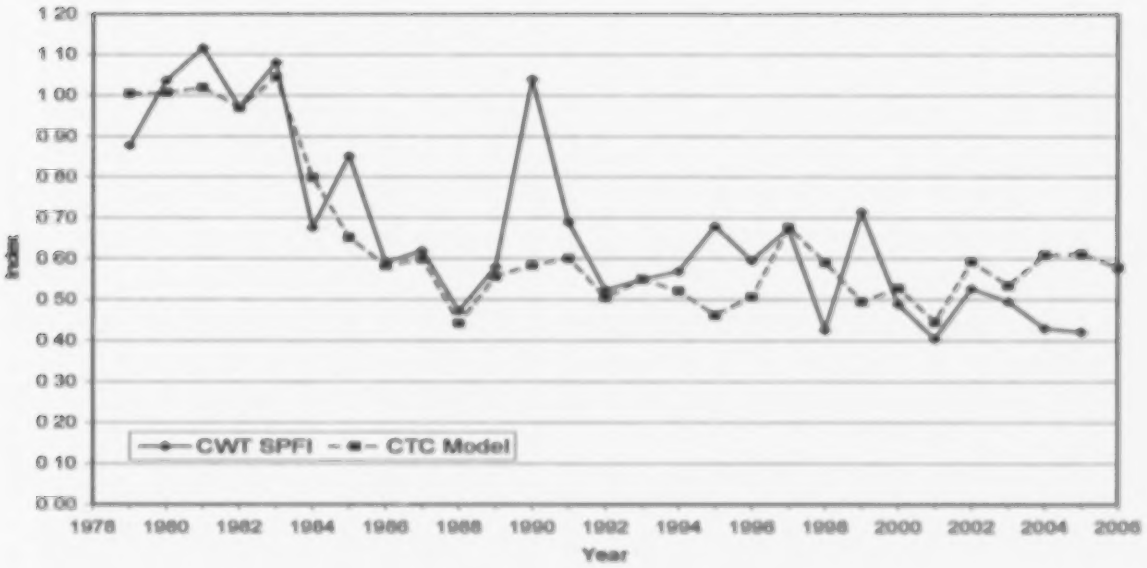


Figure 3.13. Estimated CWT (through 2005) and model total mortality fishery indices (through 2006) for the SEAK troll fishery.

The model-derived fishery mortality indices for NBC generally follow the same trend as CWT-derived indices (Figures 3.14 and 3.15). However, since 1991, the model-based estimates have exceeded the CWT-derived estimates in all but three years for both landed catch and total mortality indices. Since 2001, this difference has been noticeably large.

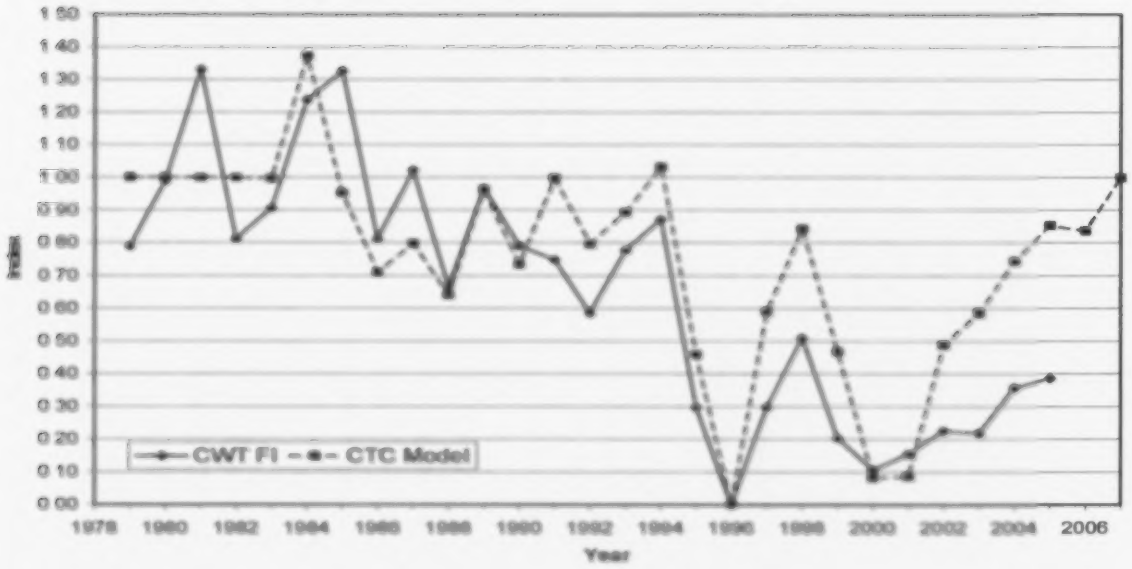


Figure 3.14. Estimated CWT (through 2005) and model landed catch fishery indices (through 2007) for the NBC troll fishery.

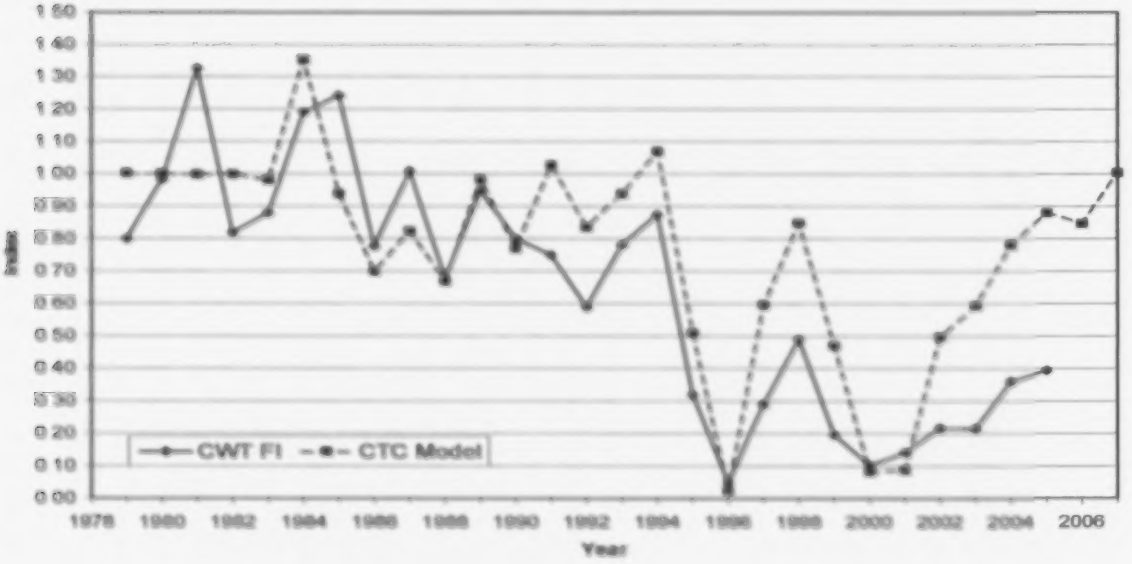


Figure 3.15. Estimated CWT (through 2005) and model total mortality fishery indices (through 2007) for the NBC troll fishery.

Since the base period, the model-derived landed catch fishery index estimates and trends for the WCVI troll fishery have been similar to those derived from CWTs. However, from 1987 through 1995, the model estimates are consistently greater than the CWT-based estimates (Figures 3.16 and 3.17). Starting in 2000, model and CWT estimates have diverged significantly for both landed catch and total mortality, with CWT indices being consistently higher than model indices.

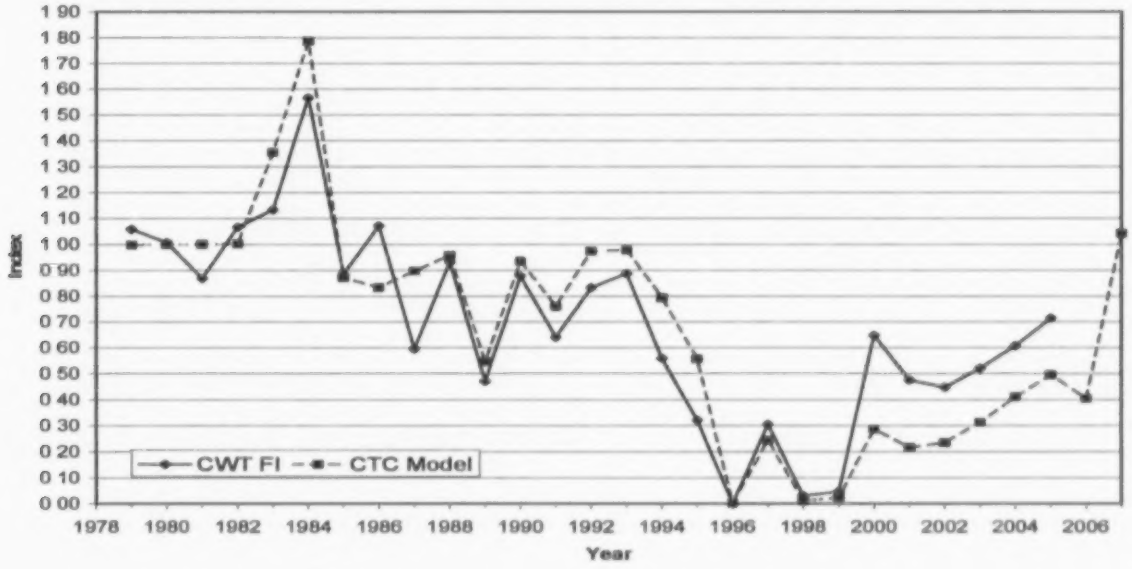


Figure 3.16. Estimated CWT (through 2005) and model landed catch fishery indices (through 2007) for the WCVI troll fishery.

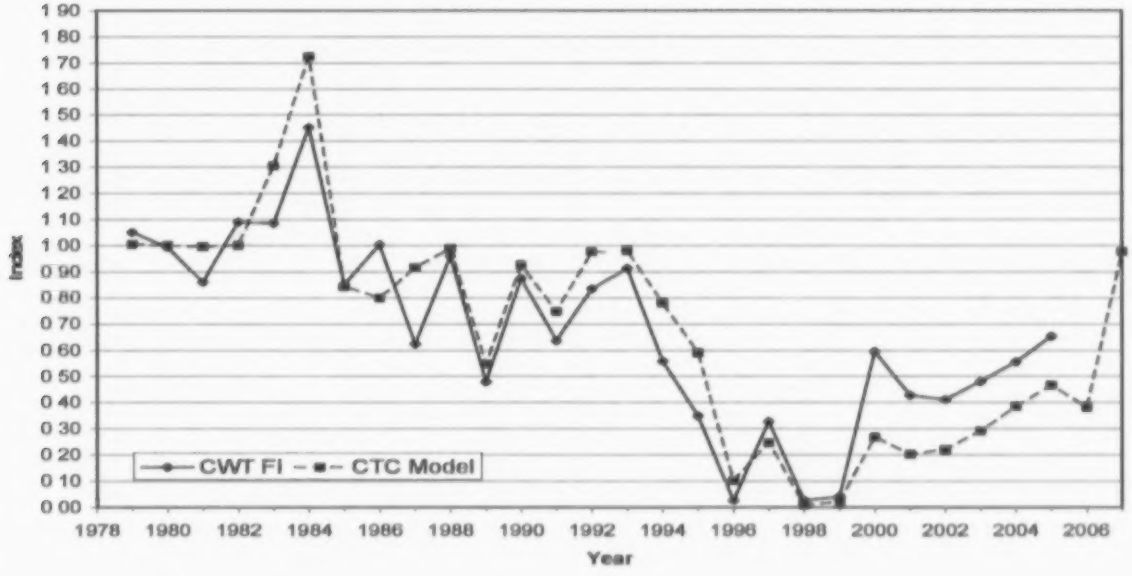


Figure 3.17. Estimated CWT (through 2005) and model total mortality fishery indices (through 2007) for the WCVI troll fishery.

3.6 AGENCY STOCK FORECASTS USED IN THE MODEL

A summary of model-produced and agency-produced forecasts from 1999-2007 is shown in Table 3.8. The relationship between the model stocks in Table 3.8 and exploitation rate indicator stocks and PST Annex stocks are shown in Appendix C. A major factor influencing how well the model can predict Chinook abundance in AABM fisheries is how well the model can predict the returns of Chinook (in terms of ocean escapement or spawning escapement) in the forecast year. During model calibration, agency forecasts are input to the model for all model stocks for which model forecasts are available. Thus, for model stocks with external forecasts, the variation between model forecasts and actual returns can be broken into two parts: 1) the ability of the model to match the input agency forecasts, and the ability of the agency forecasts to accurately predict the actual return of Chinook in the upcoming year. In Table 3.8, the column labeled 'Model Fcst/Agency Fcst' shows the percentage deviation of the model prediction from the agency forecast. The column labeled 'Agency Fcst/Postseason' shows the percentage deviation of the agency forecast from the actual return. The column labeled 'Model Fcst/Postseason' shows the percentage deviation of the model prediction of the return from the actual return.

The model forecasts tend to be higher than the agency forecasts, and are generally better predictors of actual returns. The mean absolute percent error (MAPE) of 'Model Fcst/Agency Fcst' is 36.3%, and the average percent error is 23.5%. For 'Agency Fcst/Postseason', the MAPE is 29.2%; the average percent error is -5.2%, indicating a small negative bias for the agency forecasts. For 'Model Fcst/Postseason', the MAPE is 13.8%; the average percent error is 3.9%, indicating a small positive bias for the model forecasts.

The effect of the error in predicting terminal returns or escapement on the AABM abundance indices varies between fisheries and stocks. There is no clear directional bias of this error. For example, a small stock (small in ocean abundance terms) that is over or under predicted will generally not have a large effect on a fishery's abundance index. Errors in predicting a large stock may or not affect a fishery's index, depending on the contribution of that stock to the fishery in question (see Appendix G for the model estimated stock composition of selected ocean fisheries). In addition, since the abundance index is an index, rather than an absolute measure of abundance, over or under prediction of a stock's terminal return or escapement would not affect the abundance index of a fishery if the bias in the prediction is consistent over all years in the index, including the base.

Table 3.8. Preseason forecasts and postseason estimates for PSC model stocks, 1999-2007.

Stock	Year	Model Forecast	Agency Forecast	Postseason Return	Model Fcst/ Agency Fcst	Agency Fcst/ Postseason	Model Fcst/ Postseason
AKS (Alaska SSE)	1999	15,811	n/a	12,274	n/a	n/a	29%
	2000	18,489	n/a	16,196	n/a	n/a	14%
	2001	19,860	n/a	21,850	n/a	n/a	-9%
	2002	18,613	n/a	18,790	n/a	n/a	-1%
	2003	15,018	n/a	14,676	n/a	n/a	2%
	2004	13,484	n/a	17414	n/a	n/a	-23%
	2005	18,410	n/a	16102	n/a	n/a	14%
	2006	19,519	n/a	20866	n/a	n/a	-6%
	2007	25,653	n/a	-	-	-	-
NTH (North/ Central BC)	1999	158,882	n/a	154,294	n/a	n/a	3%
	2000	184,500	n/a	188,482	n/a	n/a	-2%
	2001	194,615	n/a	223,236	n/a	n/a	-13%
	2002	175,613	n/a	147,157	n/a	n/a	19%
	2003	161,995	n/a	164,579	n/a	n/a	-2%
	2004	147,782	n/a	152,207	n/a	n/a	-3%
	2005	144,301	n/a	128,753	n/a	n/a	12%
	2006	150,072	n/a	151,812	n/a	n/a	-1%
	2007	150,019	n/a	-	-	-	-
RBH+RBT (WCVI Hatchery + Natural)	1999	95,426	68,400	101,683	40%	-33%	-6%
	2000	38,807	15,040	37,047	158%	-59%	5%
	2001	88,532	30,633	87,004	189%	-65%	2%
	2002	169,138	109,882	167,731	54%	-34%	1%
	2003	168,040	105,801	215,346	59%	-51%	-22%
	2004	246,334	144,180	257,517	71%	-44%	-4%
	2005	186,491	218,840	156,837	-15%	40%	19%
	2006	183,854	138,878	197,097	32%	-30%	-7%
	2007	151,925	117,321	-	12%	-	-

Table 3.8. Continued.

Stock	Year	Model Forecast	Agency Forecast	Postseason Return	Model Fcst/ Agency Fcst	Agency Fcst/ Postseason	Model Fcst/ Postseason
GSQ (Upper Strait of Georgia)	1999	16,732	n/a	16,140	n/a	n/a	4%
	2000	22,327	n/a	22,603	n/a	n/a	-1%
	2001	28,625	n/a	30,219	n/a	n/a	-5%
	2002	31,154	n/a	30,675	n/a	n/a	2%
	2003	31,560	n/a	31,059	n/a	n/a	2%
	2004	28,061	n/a	28,473	n/a	n/a	-1%
	2005	31,255	n/a	28,675	n/a	n/a	9%
	2006	31,587	n/a	33,024	n/a	n/a	-4%
	2007	41,711	n/a	-	-	-	-
GSH (Lower Strait of Georgia Hatchery)	1999	27,203	n/a	25,258	n/a	n/a	8%
	2000	19,752	n/a	23,422	n/a	n/a	-16%
	2001	36,318	n/a	34,775	n/a	n/a	4%
	2002	30,556	n/a	23,557	n/a	n/a	30%
	2003	22,409	n/a	24,084	n/a	n/a	-7%
	2004	22,011	n/a	22,269	n/a	n/a	-1%
	2005	24,938	n/a	28,226	n/a	n/a	-12%
	2006	25,227	n/a	22,756	n/a	n/a	11%
	2007	24,378	n/a	-	-	-	-
GST (Lower Strait of Georgia Natural)	1999	8,533	n/a	8,763	n/a	n/a	-3%
	2000	9,110	n/a	8,524	n/a	n/a	7%
	2001	7,645	n/a	8,569	n/a	n/a	-11%
	2002	7,725	n/a	8,072	n/a	n/a	-4%
	2003	6,630	n/a	5,360	n/a	n/a	24%
	2004	5,380	n/a	3,700	n/a	n/a	45%
	2005	5,275	n/a	5,415	n/a	n/a	-3%
	2006	7,576	n/a	7,469	n/a	n/a	1%
	2007	7,782	n/a	-	-	-	-

Table 3.8. Continued.

Stock	Year	Model Forecast	Agency Forecast	Postseason Return	Model Fcst/ Agency Fcst	Agency Fcst/ Postseason	Model Fcst/ Postseason
FRE (Fraser Early)	1999	123,373	n/a	105,473	n/a	n/a	17%
	2000	125,829	n/a	116,233	n/a	n/a	8%
	2001	154,292	n/a	154,175	n/a	n/a	0%
	2002	174,304	n/a	186,827	n/a	n/a	-7%
	2003	175,919	n/a	188,183	n/a	n/a	-7%
	2004	154,445	n/a	141,029	n/a	n/a	10%
	2005	157,949	n/a	134,641	n/a	n/a	17%
	2006	186,279	n/a	203,212	n/a	n/a	-8%
	2007	196,060	n/a	-	-	-	-
FRL (Fraser Late)	1999	181,224	82,650	184,099	119%	-55%	-2%
	2000	143,748	222,400	120,744	-35%	84%	19%
	2001	154,239	131,800	141,196	17%	-7%	9%
	2002	148,191	160,100	165,245	-7%	-3%	-10%
	2003	299,368	114,780	313,929	161%	-63%	-5%
	2004	188,987	97,227	196,396	94%	-50%	-4%
	2005	125,360	108,061	124,704	16%	-13%	1%
	2006	105,932	116,682	108,639	-9%	7%	-2%
	2007	122,402	107,311	-	14%	-	-
NKS (Nooksack Spring)	1999	269	n/a	251	n/a	n/a	7%
	2000	413	n/a	444	n/a	n/a	-7%
	2001	508	n/a	531	n/a	n/a	-4%
	2002	490	n/a	513	n/a	n/a	-4%
	2003	460	n/a	414	n/a	n/a	11%
	2004	409	n/a	448	n/a	n/a	-9%
	2005	442	n/a	330	n/a	n/a	34%
	2006	551	677	630	-19%	7%	-13%
	2007	582	575	-	-	-	-

Table 3.8. Continued.

Stock	Year	Model Forecast	Agency Forecast	Postseason Return	Model Fcst/ Agency Fcst	Agency Fcst/ Postseason	Model Fcst/ Postseason
NKF (Nooksack/ Samish Fall Fingerling)	1999	36,799	27,000	41,186	36%	-34%	-11%
	2000	40,690	19,000	32,646	114%	-42%	25%
	2001	53,980	36,450	64,685	48%	-44%	-17%
	2002	51,572	54,420	54,302	-5%	0%	-5%
	2003	34,751	45,750	30047	-24%	52%	16%
	2004	21,566	34,200	17913	-37%	91%	20%
	2005	19,541	19,523	15872	0%	23%	23%
	2006	25,343	16,899	30591	50%	-45%	-17%
	2007	22,086	18,834	-	17%	-	-
SNO (Snohomish Wild)	1999	5,513	5,600	4,832	-2%	16%	14%
	2000	5,676	6,000	6,116	-5%	-2%	-7%
	2001	5,986	5,760	5,414	4%	6%	11%
	2002	6,523	6,700	7,267	-3%	-8%	-10%
	2003	7,161	5,450	5571	31%	-2%	29%
	2004	7,857	15,700	10700	-50%	47%	-27%
	2005	7,283	n/a	4611	n/a	n/a	58%
	2006	8,693	8,729	8438	0%	3%	3%
	2007	11,153	12,289	-	-	-	-
SKG (Skagit Summer/ Fall Wild)	1999	8,495	7,600	5,139	12%	48%	65%
	2000	15,725	7,300	16,266	115%	-55%	-3%
	2001	15,936	9,184	14,193	74%	-35%	12%
	2002	14,069	13,455	18,114	5%	-26%	-22%
	2003	16,391	11,348	10,583	44%	7%	55%
	2004	21,789	20,359	22,144	7%	-8%	-2%
	2005	20,767	19,493	22,784	7%	-14%	-9%
	2006	18,049	21,811	21,246	-17%	3%	-15%
	2007	12,324	14,252	-	-14%	-	-

Table 3.8. Continued.

Stock	Year	Model Forecast	Agency Forecast	Postseason Return	Model Fcst/ Agency Fcst	Agency Fcst/ Postseason	Model Fcst/ Postseason
PSN (Puget Sound Natural)	1999	28,304	28,400	31,014	0%	-8%	-9%
	2000	25,780	10,000	19,048	158%	-48%	35%
	2001	29,263	18,900	35,542	55%	-47%	-18%
	2002	27,808	19,801	28,000	40%	-29%	-1%
	2003	23,217	26,600	17,656	-13%	51%	31%
	2004	22,786	23,200	29,807	-2%	-22%	-24%
	2005	17,893	17,715	9,812	1%	81%	82%
	2006	19,789	21,301	23,555	-7%	-10%	-16%
	2007	18,964	17,014		11%	-	-
STL (Stillaguamish Summer/Fall Wild)	1999	1,319	n/a	1,098	n/a	n/a	20%
	2000	1,448	1,500	1,645	-3%	-9%	-12%
	2001	1,474	1,360	1,386	8%	-2%	6%
	2002	1,405	1,449	1,588	-3%	-9%	-12%
	2003	1,278	2,050	988	-38%	107%	29%
	2004	1,247	n/a	1506	n/a	n/a	-17%
	2005	1,192	n/a	963	n/a	n/a	24%
	2006	1,250	1,169	1254	7%	-7%	0%
	2007	1,424	1,510	-	n/a	-	-
PSF+PSY (Puget Sound Fingerling + Yearling)	1999	95,189	69,285	116,204	37%	-40%	-18%
	2000	90,131	69,800	67,540	29%	3%	33%
	2001	98,500	105,955	112,371	-7%	-6%	-12%
	2002	98,215	124,608	103,805	-21%	20%	-5%
	2003	86,544	133,850	74,335	-35%	80%	16%
	2004	88,891	132,300	87548	-33%	51%	2%
	2005	100,403	110,542	98348	-9%	12%	2%
	2006	121,482	113,486	118036	7%	-4%	3%
	2007	127,115	135,714	-	-6%	-	-

Table 3.8. Continued.

Stock	Year	Model Forecast	Agency Forecast	Postseason Return	Model Fcst/ Agency Fcst	Agency Fcst/ Postseason	Model Fcst/ Postseason
WCN	1999	31,231	43,780	24,951	-29%	75%	25%
(Washington	2000	28,805	n/a	22,978	n/a	n/a	25%
Coastal	2001	32,663	35,306	35,783	-7%	-1%	-9%
Natural)	2002	37,147	33,489	35,378	11%	-5%	5%
	2003	43,072	n/a	41,135	n/a	n/a	5%
	2004	43,809	n/a	54,943	n/a	n/a	-20%
	2005	40,904	n/a	37,255	n/a	n/a	10%
	2006	36,759	n/a	34,150	n/a	n/a	8%
	2007	35,695	32362	-	n/a	-	-
WCH	1999	19,899	42,752	14,044	-53%	204%	42%
(Washington	2000	21,081	n/a	23,036	n/a	n/a	-8%
Coastal	2001	25,373	n/a	23,359	n/a	n/a	9%
Hatchery)	2002	28,570	n/a	30,491	n/a	n/a	-6%
	2003	32,178	18,222	31,259	77%	-42%	3%
	2004	33,153	n/a	35,275	n/a	n/a	-6%
	2005	34,781	n/a	32,421	n/a	n/a	7%
	2006	37,546	n/a	38,633	n/a	n/a	-3%
	2007	41,801	40,497	-	n/a	-	-
CWS	1999	4,223	3,950	4,799	7%	-18%	-12%
(Cowlitz	2000	7,325	6,050	6,132	21%	-1%	19%
Spring)	2001	5,972	4,849	7,182	23%	-32%	-17%
	2002	17,894	6,800	11,456	163%	-41%	56%
	2003	27,412	11,700	25,522	134%	-54%	7%
	2004	24,638	27,350	32,375	-10%	-16%	-24%
	2005	17,557	24,850	15,724	-29%	58%	12%
	2006	17,522	15,250	20,081	15%	-24%	-13%
	2007	9,945	10,600	-	-6%	-	-

Table 3.8. Continued.

Stock	Year	Model Forecast	Agency Forecast	Postseason Return	Model Fcst/ Agency Fcst	Agency Fcst/ Postseason	Model Fcst/ Postseason
WSH (Willamette Spring)	1999	51,391	49,875	55,801	3%	-11%	-8%
	2000	52,561	61,211	57,592	-14%	6%	-9%
	2001	96,472	59,600	82,017	62%	-27%	18%
	2002	130,622	77,434	127,200	69%	-39%	3%
	2003	113,312	112,521	129,700	1%	-13%	-13%
	2004	103,887	112,701	112,701	-8%	0%	-8%
	2005	76,512	122,280	59,500	-37%	106%	29%
	2006	63,878	52,388	52,388	22%	0%	22%
	2007	44,542	61,071	-	-27%	-	-
SUM (Columbia River Summer)	1999	21,199	20,900	22,347	1%	-6%	-5%
	2000	31,020	28,038	23,169	11%	21%	34%
	2001	54,931	24,500	54,935	124%	-55%	0%
	2002	79,068	77,700	92,820	2%	-16%	-15%
	2003	81,271	87,600	83,120	-7%	5%	-2%
	2004	69,933	78,589	65,446	-11%	20%	7%
	2005	65,834	62,400	60,060	6%	4%	10%
	2006	64,909	78,512	78,196	-17%	0%	-17%
	2007	56,948	45,555	-	25%	-	-
BON+CWF (Bonneville + Cowlitz Hatcheries)	1999	42,889	34,800	39,881	23%	-13%	8%
	2000	33,268	23,700	26,971	40%	-12%	23%
	2001	114,245	32,200	94,240	255%	-66%	21%
	2002	134,349	137,600	156,411	-2%	-12%	-14%
	2003	158,666	115,900	154,960	37%	-25%	2%
	2004	102,723	77,100	108,308	33%	-29%	-5%
	2005	76,856	74,100	73,861	4%	0%	4%
	2006	56,962	55,800	58,317	2%	-4%	-2%
	2007	49,219	54,900	-	-10%	-	-

Table 3.8. Continued.

Stock	Year	Model Forecast	Agency Forecast	Postseason Return	Model Fcst/ Agency Fcst	Agency Fcst/ Postseason	Model Fcst/ Postseason
SPR (Spring Creek Hatchery)	1999	46,339	65,800	50,189	-30%	31%	-8%
	2000	16,957	21,900	20,528	-23%	7%	-17%
	2001	139,825	56,600	124,954	147%	-55%	12%
	2002	145,983	144,400	160,836	1%	-10%	-9%
	2003	179,222	96,900	180,592	85%	-46%	-1%
	2004	175,423	138,000	175,245	27%	-21%	0%
	2005	86,249	114,100	93,145	-24%	22%	-7%
	2006	36,800	50,000	27,918	-26%	79%	32%
	2007	19,421	21,800	-	-11%	-	-
URB (Columbia Upriver Bright)	1999	191,146	147,500	165,889	30%	-11%	15%
	2000	148,584	171,100	156,553	-13%	9%	-5%
	2001	275,024	127,200	232,491	116%	-45%	18%
	2002	282,720	281,000	276,948	1%	1%	2%
	2003	321,516	280,400	373,191	15%	-25%	-14%
	2004	318,313	292,200	362,804	9%	-19%	-12%
	2005	298,178	352,200	268,744	-15%	31%	11%
	2006	228,927	253,900	227,535	-10%	12%	1%
	2007	168,594	182,400	-	-8%	-	-
LYF (Snake River Wild)	1999	862	n/a	905	n/a	n/a	-5%
	2000	1,887	n/a	1,148	n/a	n/a	64%
	2001	2473	734	5,163	237%	-86%	-52%
	2002	3,853	n/a	2,116	n/a	n/a	82%
	2003	3,838	2,185	3,856	76%	-43%	0%
	2004	3,244	3,725	4,443	-13%	-16%	-27%
	2005	3,650	4,000	2,602	-9%	54%	40%
	2006	2,633	3,500	2,743	-25%	28%	-4%
	2007	3,128	2,700	-	16%	-	-

Table 3.8. Continued.

Stock	Year	Model Forecast	Agency Forecast	Postseason Return	Model Fcst/ Agency Fcst	Agency Fcst/ Postseason	Model Fcst/ Postseason
MCB (Mid-Columbia Bright)	1999	44,503	38,300	50800	16%	-25%	-12%
	2000	43,859	50,600	37,200	-13%	36%	18%
	2001	63,522	43,500	76,600	46%	-43%	-17%
	2002	123,497	96,200	108,400	28%	-11%	14%
	2003	156,037	104,800	150,300	49%	-30%	4%
	2004	114,704	90,400	122,600	27%	-26%	-6%
	2005	87,384	89,400	97,900	-2%	-9%	-11%
	2006	81,685	88,300	80,471	-7%	10%	2%
	2007	77,470	68,000	-	14%	-	-
LRW (Lewis River Wild)	1999	4,456	2,600	3,349	71%	-22%	33%
	2000	8,494	3,500	10,234	143%	-66%	-17%
	2001	13,521	16,700	15,721	-19%	6%	-14%
	2002	20,219	18,200	24,948	11%	-27%	-19%
	2003	20,371	24,600	26,021	-17%	-5%	-22%
	2004	35,222	24,100	22,327	46%	8%	58%
	2005	16,587	20,200	16,767	-18%	20%	-1%
	2006	18,882	16,600	17,896	14%	-7%	6%
	2007	10,306	10,100	-	2%	-	-
ORC (Oregon Coastal)	1999	81,048	72,084	84,293	12%	-14%	-4%
	2000	102,651	63,259	69,074	62%	-8%	49%
	2001	128,508	66,412	132,732	94%	-50%	-3%
	2002	169,708	73,914	176,929	130%	-58%	-4%
	2003	162,636	85,483	174,091	90%	-51%	-7%
	2004	148,645	131,904	129,579	13%	2%	15%
	2005	137,902	167,213	167,211	-18%	0%	-18%
	2006	124,296	136,373	112,797	-9%	21%	10%
	2007	108,338	131,195	-	-17%	-	-

3.7 EVALUATION OF MARK-SELECTIVE FISHERIES

There have been mark-selective fisheries (MSF) for Chinook salmon in the Strait of Juan de Fuca Washington sport fishery since 2003, in the Columbia River net fisheries since 2002, and in Columbia River spring Chinook sport fisheries since 2000. Double index tag (DIT) groups are comprised of paired releases of marked and unmarked fish with CWTs. Seven Puget Sound fall Chinook stocks and one Columbia River stock have DIT groups. The DIT is used as a monitoring tool to test the hypothesis that there are differences between the marked and unmarked tagged groups due to MSFs and also to estimate mortalities of unmarked fish in MSFs.

A significant change in the ratio of unmarked to marked DIT groups at hatchery escapement can indicate that mark-selective fisheries have differentially impacted DIT pairs. Only small or non-significant differences were previously observed in the DIT groups evaluated (CTC 2007), and statistical analysis of 2006 returns also indicated little effect of the MSFs between the unmarked and marked DIT pairs. Based on these results, the estimates of exploitation rate of marked tagged groups were used in CTC analyses this year without adjustment for MSFs.

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Appendix A.1. Southeast Alaska (SEAK) Chinook catches, 1975-2006.

Year	Southeast Alaska						
	Troll	Net	Sport	Total	Add-on	Terminal Exclusion	Treaty Catch
1975	287,342	13,365	17,000	317,707	-	-	-
1976	231,239	10,523	17,000	258,762	-	-	-
1977	271,735	13,443	17,000	302,178	-	-	-
1978	375,919	25,492	17,000	418,411	-	-	-
1979	337,672	28,388	16,581	382,641	-	-	-
1980	303,643	20,114	20,213	343,970	-	-	-
1981	248,782	18,952	21,300	289,034	-	-	-
1982	241,938	46,992	25,756	314,686	-	-	-
1983	269,821	19,516	22,321	311,658	-	-	-
1984	235,622	32,405	22,050	290,077	-	-	-
1985	215,811	33,870	24,858	274,539	6,246	-	268,293
1986	237,703	22,099	22,551	282,353	11,091	-	271,262
1987	242,562	15,532	24,324	282,418	17,095	-	265,323
1988	231,364	21,788	26,160	279,312	22,525	-	256,787
1989	235,716	24,245	31,071	291,032	21,510	-	269,522
1990	287,939	27,712	51,218	366,869	45,873	-	320,996
1991	264,106	34,864	60,492	359,462	61,476	-	297,986
1992	183,759	32,140	42,892	258,791	36,811	-	221,980
1993	226,866	27,991	49,246	304,103	32,910	-	271,193
1994	186,331	35,654	42,365	264,350	29,185	-	235,165
1995	138,117	47,955	49,667	235,739	58,800	-	176,939
1996	141,452	37,298	57,509	236,259	72,599	8,663	154,997
1997	246,409	25,069	71,524	343,002	46,463	9,843	286,696
1998	192,066	23,514	55,013	270,593	25,021	2,420	243,152
1999	146,219	32,720	72,081	251,020	47,725	4,453	198,842
2000	158,717	41,400	63,173	263,290	74,316	2,481	186,493
2001	153,280	40,163	72,291	265,734	77,287	1,528	186,919
2002	325,308	31,689	69,537	426,534	68,164	1,237	357,133
2003	330,692	39,374	69,370	439,436	57,228	2,056	380,152
2004	354,664	64,038	87,505[2]	506,207	72,025	5,409 736	428,773[1] 433,446
2005	338,437	73,066	84,279[2]	495,782	64,102	44,973	386,707
2006	282,315	72,595	85,794[2]	440,704	50,059	31,462	359,184

Troll, net, sport and total catches include catch of SEAK hatchery-origin fish; catches that count towards the all-gear ceiling (with hatchery add-on subtracted) are shown in the "treaty catch" column.

"-" = not applicable.

[1] The value on top excludes District 108 Stikine catch above base levels. The value below includes it.

[2]These values are preliminary.

Appendix A.2. Northern British Columbia (NBC) Chinook catches, 1975-2006.

Year	Northern British Columbia						
			Tidal Sport				
	Area 1-5 Troll [1]	Area 1-5 Net	Areas 1,2E, 2W	Areas 3-5	Area 1-5 Freshwater Sport	Area 1-5 First Nations	Total
1975	228,121	25,095	NA	NA	NA	4,055	257,271
1976	190,267	16,105	NA	NA	NA	2,791	209,163
1977	130,899	44,196	106	1,670	2,158	6,998	186,027
1978	146,054	27,924	125	1,668	6,610	5,363	187,744
1979	147,576	40,640	0	2,523	1,960	5,266	197,965
1980	157,198	26,895	200	3,867	4,515	10,121	202,796
1981	153,065	41,724	184	2,760	2,613	11,115	211,461
1982	173,472	44,844	215	3,760	2,726	13,255	238,272
1983	162,837	17,134	90	4,092	5,374	15,532	205,059
1984	185,134	31,321	171	2,300	3,426	11,408	233,760
1985	165,845	39,562	600	3,600	3,186	15,794	228,587
1986	175,715	23,902	1,153	3,950	4,410	24,448	233,578
1987	177,457	18,357	2,644	4,150	3,625	16,329	222,562
1988	152,369	31,339	7,059	4,300	3,745	21,727	220,539
1989	207,679	38,623	20,652	4,150	5,247	21,023	297,374
1990	154,109	28,359	16,827	4,300	4,090	27,105	234,790
1991	194,018	40,899	15,047	4,256	4,764	23,441	282,425
1992	142,340	35,716	21,358	6,250	6,182	27,012	238,858
1993	161,686	33,944	25,297	3,279	7,813	21,353	253,372
1994	164,581	22,032	28,973	3,171	3,093	15,949	237,799
1995	56,857	18,076	22,531	2,475	3,503	13635	117,077
1996	21	28,894	670	3,382	1,250	13,345	47,562
1997	83,488	20,415	27,738	0	NA	14,610	146,251
1998	107,837	7,144	34,130	4,750	NA	20,622	174,483
1999	56,499	10,094	30,227	11,700	NA	27,399	135,919
2000	9,800	22,329	22,100	8,600	NA	23,476	86,305
2001	13,100	25,424	30,400	11,000	NA	23,508	103,432
2002	103,038	14,902	47,100	8,000	NA	14,125	187,165
2003	137,357	14,730	54,300	NA	5,711[2]	20,950	233,048
2004	167,508	16,187	74,000	NA	NA	20,548	278,243
2005	174,806	6,850	68,800	NA	NA	17,553	267,770
2006	158,363	12,561	64,500	NA	NA	17,262	252,686

[1] Since 1998, the catch accounting year for troll fisheries was set from October 1-September 30. To make comparisons to previous years more meaningful, the same catch accounting period was applied for years prior to 1998.

[2] Estimate of lower Skeena River sport catch only.

Note that Troll (Areas 1-5) and Tidal Sport (Areas 1, 2E, 2W) are the components of the NBC AABM fishery. Net catch excludes jacks and small red-fleshed Chinook.

NA=not available

Appendix A.3. Central British Columbia (CBC) Chinook catches, 1975-2006.

Year	Central British Columbia					
	Troll [1]	Net	Tidal Sport	Freshwater Sport	First Nations	Total
1975	135,470	40,985	NA	NA	NA	176,455
1976	145,204	32,669	NA	NA	NA	177,873
1977	122,689	32,409	4,773	1,544	6,972	168,387
1978	91,025	35,708	5,694	1,770	7,944	142,141
1979	107,884	50,445	5,225	1,940	7,585	173,079
1980	95,377	27,715	4,802	988	6,240	135,122
1981	69,247	18,912	3,490	1,261	5,701	98,611
1982	69,748	32,419	5,419	1,293	9,112	117,991
1983	97,447	12,556	4,271	821	6,442	121,537
1984	78,120	4,630	4,354	1,332	9,736	98,172
1985	27,090	12,391	3,943	823	6,019	50,266
1986	54,407	23,032	4,566	1,245	6,353	89,603
1987	65,776	10,893	3,933	1,563	6,296	88,461
1988	36,125	12,886	3,596	1,496	6,000	60,103
1989	21,694	6,599	3,438	4,526	8,992	45,249
1990	29,882	18,630	4,053	5,626	9,811	68,002
1991	29,843	15,926	4,409	3,335	8,801	62,314
1992	47,868	18,337	4,891	3,204	8,533	82,833
1993	23,376	10,579	6,114	2,880	9,095	52,044
1994	18,976	14,424	4,303	973	5,383	44,059
1995	5,819	11,007	2,172	1,180	3,501	23,679
1996	0	6,829	2,936	3,986	6,922	20,673
1997	12,351	3,575	8,524	1,139	9,764	35,353
1998	2,198	5,355	5,514	779	6,671	20,517
1999	2,074	4,320	10,300	NA[2]	5,440	22,134
2000	0	3,210	7,400	NA[2]	4,576	15,186
2001	0	6,462	7,650	1,024	5,435	20,571
2002	481	4,676	7,330	723	3,292	16,502
2003	20	2,806	8,385	491	3,173	14,875
2004	0	6,324	10,677	524	4,003	21,528
2005	0	6,323	9,017	809	4,180	20,329
2006	0	5,231	9,400	NA	4,013	18,644

[1] Since 1998, the catch accounting year for troll fisheries was set from October 1-September 30. To make comparisons to previous years more meaningful, the same catch accounting period was applied for years prior to 1998.

[2] freshwater catch included with tidal catch

Net catch excludes jacks and small red-fleshed Chinook.

NA=not available

Appendix A.4. West Coast Vancouver Island (WCVI) Chinook catches, 1975-2006.

Year	West Coast Vancouver Island						
			Tidal Sport	Tidal Sport			
	Troll [1]	Net	Inside [2]	Outside	Freshwater Sport	First Nations	Total
1975	546,214	19,233	NA	-	NA	NA	565,447
1976	665,010	17,492	NA	-	NA	NA	682,502
1977	545,742	13,745	NA	-	NA	NA	559,487
1978	568,705	25,143	NA	-	NA	NA	593,848
1979	477,222	35,623	7,964	-	NA	NA	520,809
1980	486,303	34,732	8,539	-	NA	NA	529,574
1981	423,266	36,411	11,230	-	NA	NA	470,907
1982	538,510	41,172	17,100	-	NA	NA	596,782
1983	395,636	37,535	28,000	-	NA	NA	461,171
1984	471,294	43,792	44,162	-	NA	NA	559,248
1985	345,937	11,089	21,587	-	NA	NA	378,613
1986	350,227	3,276	13,158	-	NA	NA	366,661
1987	378,931	478	38,283	-	NA	NA	417,692
1988	408,668	15,438	35,820	-	NA	NA	459,926
1989	203,751	40,321	55,239	-	NA	NA	299,311
1990	297,858	29,578	69,723	-	NA	1,199	398,358
1991	203,035	60,797	85,983	-	NA	41,322	391,137
1992	340,146	9,486	46,968	18,518	NA	8,315	423,433
1993	277,033	28,694	65,604	23,312	NA	5,078	399,721
1994	150,039	2,369	52,526	10,313	NA	1,515	216,762
1995	81,454	458	21,675	13,956	NA	5,868	123,411
1996	4	0	2,266	10,229	NA	4,308	16,807
1997	52,748	486	47,355	6,400	NA	1,199	108,188
1998	2,282	1,643	55,697	4,177	NA	1,600	65,399
1999	5,307	970	47,163	31,106	NA	11,458	96,004
2000	63,400	100	4,468	38,038	NA	2,396	108,402
2001	77,491	0	6,423	40,179	6,198	930	131,221
2002	132,921	456	36,140	32,115	77	10,893	212,602
2003	151,826	9,057	51,622	23,995	NA	10,082	246,582
2004	174,128	12,532	61,132	42,496	26	20,000	310,314
2005	148,734	23,599	41,710	53,928	6,225	35,000	316,756
2006	103,978	20,308	41,380	37,905	NA	28,628	225,138

Troll: Areas 21, 23-27, and 121-127; Net: Areas 21, and 23-27; Sport: Areas 23a, 23b, 24-27

[1] Since 1998, the catch accounting year for troll fisheries was set from October 1-September 30. To make comparisons to previous years more meaningful, the same catch accounting period was applied for years prior to 1998.

[2] Prior to 1992, catch was not reported as 'inside' or 'outside'. Therefore 'inside' catch for those years represents total tidal sport catch.

[3] Including 5,000 First Nations troll catch.

NA=not available; "-" = not applicable.

Appendix A.5. Johnstone Strait Chinook catches, 1975-2006.

Year	Johnstone Strait					
	Troll [1] Area 12	Net	Tidal Sport	Freshwater Sport	First Nations	Total
1975	18,065	30,295	NA	NA	NA	48,360
1976	30,838	31,855	NA	NA	NA	62,693
1977	26,868	49,511	NA	NA	NA	76,379
1978	13,052	55,148	NA	NA	NA	68,200
1979	13,052	31,291	NA	NA	NA	44,343
1980	11,743	30,325	NA	NA	NA	42,068
1981	13,035	28,620	NA	NA	NA	41,655
1982	11,234	29,454	NA	NA	NA	40,688
1983	14,653	28,364	NA	NA	NA	43,017
1984	9,260	18,361	NA	NA	NA	27,621
1985	3,567	38,073	NA	NA	NA	41,640
1986	3,951	17,866	NA	NA	NA	21,817
1987	1,780	13,863	NA	NA	NA	15,643
1988	1,566	6,292	NA	NA	NA	7,858
1989	1,825	29,486	NA	NA	NA	31,311
1990	2,298	18,433	NA	NA	NA	20,731
1991	1,228	15,071	10,075	NA	1,287	27,661
1992	2,721	9,571	14,715	NA	29	27,036
1993	4,172	15,530	NA	NA	20	19,722
1994	2,231	8,991	NA	NA	0	11,222
1995	4	970	NA	NA	71	1,045
1996	0	447	NA	NA	107	554
1997	1,380	819	NA	NA	179	2,378
1998	990	60	2,366	NA	138	3,554
1999	89	156	7,813	NA	469	8,527
2000	197	220	5,719	NA	212	6,348
2001	500 [2]	200	3,759	NA	370	4,329
2002	100	600	2,331	NA	400	3,431
2003	710	299	7585	NA	130	8724
2004	630	220	12,837	NA	28	13,715
2005	2	291	12,009	NA	NA	12,302
2006	0	244	7,238	NA	200	7,682

Troll: Area 12

Net: Areas 11-13

Sport: Based on July - August creel census in Area 12 and northern half of Area 13

[1] Since 1998, the catch accounting year for troll fisheries was set from October 1-September 30. To make comparisons to previous years more meaningful, the same catch accounting period was applied for years prior to 1998.

[2] Preliminary estimate

NA=not available

Appendix A.6. Strait of Georgia/Fraser Chinook catches, 1975-2006.

Year	Strait of Georgia/Fraser					
	Troll [1]	Net	Tidal Sport	Freshwater Sport [2]	First Nations [3]	Total
1975	174,001	66,119	398,000	NA	20,170	658,290
1976	200,229	73,018	490,000	NA	19,189	782,436
1977	248,082	85,222	372,000	NA	23,310	728,614
1978	217,955	50,247	500,000	NA	19,541	787,743
1979	255,057	49,038	350,000	NA	14,931	669,026
1980	273,077	31,161	204,100	NA	15,252	523,590
1981	239,266	19,985	197,239	NA	11,987	468,477
1982	179,040	22,971	124,390	96	35,687	362,184
1983	105,133	17,520	198,433	NA	15,756	336,842
1984	90,280	19,851	369,445	7,880	22,784	510,240
1985	55,888	31,006	234,838	1,874	10,895	334,501
1986	44,043	32,359	181,896	1,573	15,646	275,517
1987	38,084	13,016	121,081	4,876	14,525	191,582
1988	20,224	8,373	119,117	7,546	15,589	170,849
1989	28,444	23,833	132,846	918	5,983	192,024
1990	34,304	15,298	111,914	2,341	17,948	181,805
1991	32,412	15,407	115,523	1,616	22,185	187,143
1992	37,250	9,159	116,581	1,677	20,038	184,705
1993	33,293	16,153	127,576	1,930	20,597	199,549
1994	12,916	14,078	70,839	2,475	22,476	122,784
1995	138	6,263	62,173	9,158	20,790	98,522
1996	2	9,591	89,589	6,749	17,781	123,712
1997	908	28,342	56,332	4,180	29,497	119,259
1998	105	6,779	20,923	22,709	18,926	69,442
1999	80	3,906	43,588	10,071	28,226	85,871
2000	270	5,584	32,750	2,078	26,213	66,895
2001	0	4,301	31,259	23,729	28,460	87,749
2002	506	8,980	52,979	21,400	27,774	111,639
2003	17	12,277	19,981	20,363	29,634	82,272
2004	17	12,318	13,475	16,885[4]	41,141	89,246
2005	0	5,296	11,972	21,831	26,919	66,018
2006	0	3,372	12,181	15,143	21,733	52,429

Troll: Areas 13-18 and 29; Net: Areas 14-19, 28 and 29; Sport: Areas 13-18, 19a, 28 and 29

[1] Since 1998, the catch accounting year for troll fisheries was set from October 1-September 30. To make comparisons to previous years more meaningful, the same catch accounting period was applied for years prior to 1998.

[2] Prior to 1990, catch includes catch from Fraser systems only; catch records not available those years from non-Fraser systems.

[3] No catch records are available for non-Fraser catch prior to 1990.

[4] Underestimate. NA=not available

Appendix A.7. Canada - Strait of Juan de Fuca Chinook catches, 1975-2006.

Year	Canada - Strait of Juan de Fuca				
	Net	Tidal Sport	Freshwater Sport [1]	First Nations	Total
1975	9,799	NA	NA	NA	9,799
1976	13,004	NA	NA	NA	13,004
1977	25,344	NA	NA	NA	25,344
1978	9,725	NA	NA	NA	9,725
1979	8,665	NA	NA	NA	8,665
1980	3,438	37,900	NA	NA	41,338
1981	9,982	29,832	NA	NA	39,814
1982	7,072	30,646	NA	NA	37,718
1983	328	30,228	NA	NA	30,556
1984	6,237	24,353	NA	NA	30,590
1985	17,164	27,843	NA	NA	45,007
1986	17,727	34,387	NA	NA	52,114
1987	6,782	24,878	NA	NA	31,660
1988	4,473	31,233	NA	NA	35,706
1989	21,238	32,539	NA	NA	53,777
1990	7,405	30,127	NA	42	37,574
1991	8,893	19,017	NA	250	28,160
1992	10,023	21,090	NA	302	31,415
1993	2,287	13,967	NA	317	16,571
1994	8,931	14,372	NA	600	23,903
1995	631	14,405	NA	751	15,787
1996	362	19,012	NA	20	19,394
1997	307	17,080	NA	42	17,429
1998	115	9,709	NA	1,500	11,324
1999	128	14,808	NA	52	14,988
2000	100	10,973	NA	272	11,345
2001	0	23,463	NA	135	23,598
2002	0	24,084	NA	NA	24,084
2003	292	26,630	NA	NA	26,922
2004	0	40,877	NA	NA	40.877
2005	153	30,480	NA	NA	30,633
2006	155	26,437	NA	NA	26,592

Net: Area 20

Sport: Areas 19b and 20

[1] While catch records are poor, in-river sport catch is believed to be small

NA=not available

Appendix A.8. Washington - Strait of Juan de Fuca Chinook catches, 1975-2006.

Year	Washington - Strait of Juan de Fuca			
	Troll	Net	Sport	Total
1975	5,752	8,048	81,681	95,481
1976	10,488	6,072	75,308	91,868
1977	8,915	14,930	53,238	77,083
1978	10,006	11,224	62,299	83,529
1979	7,804	10,939	67,094	85,837
1980	10,682	11,320	56,415	78,417
1981	15,638	18,541	51,352	85,531
1982	19,024	22,547	29,842	71,413
1983	18,489	16,141	58,060	92,690
1984	15,650	12,120	48,003	75,773
1985	11,808	12,784	44,267	68,859
1986	30,000	17,000	69,000	116,000
1987	45,000	11,000	53,000	109,000
1988	49,000	10,000	39,000	98,000
1989	65,000	10,000	52,000	127,000
1990	47,162	5,294	50,903	103,359
1991	37,127	3,390	39,667	80,184
1992	31,452	927	38,438	70,817
1993	9,794	1,482	32,434	43,710
1994	3,346	5,864	1,661	10,871
1995	6,397	4,769	6,349	17,515
1996	9,757	604	4,825	15,186
1997	829	492	12,238	13,559
1998	338	265	2,159	2,762
1999	544	589	1,990	3,123
2000	332	640	1,670	2,642
2001	1,974	931	4,819	7,724
2002	1,783	1,076	2,028	4,887
2003	436	908	5,290	6,634
2004	20,627	592	4,519	25,738
2005	5,344	175	2700	8,219
2006	920	957	NA	NA

Troll: Areas 5 and 6C; Area 4B from Jan. 1 - April 30 and Oct. 1 - Dec. 31
Net: Areas 4B, 5, and 6C
Sport: Areas 5 and 6, 4B Neah Bay "add-on" fishery

Appendix A.9. Washington - San Juan Chinook catches, 1975-2006.

Year	Washington - San Juans			
	Troll	Net	Sport	Total
1975	3	90,100	31,988	122,091
1976	0	66,832	34,505	101,337
1977	62	84,316	14,049	98,427
1978	3	87,565	15,083	102,651
1979	5	53,750	17,367	71,122
1980	0	64,338	12,231	76,569
1981	4	50,695	9,727	60,426
1982	0	38,763	6,953	45,716
1983	2	28,497	15,166	43,665
1984	83	33,432	25,759	59,274
1985	872	33,579	12,610	47,061
1986	0	21,000	15,000	36,000
1987	0	29,000	14,000	43,000
1988	0	32,000	9,000	41,000
1989	1,000	16,000	9,000	26,000
1990	666	8,608	7,370	16,644
1991	135	11,753	5,115	17,003
1992	172	14,011	6,788	20,971
1993	243	14,002	6,916	21,161
1994	73	13,908	5,795	19,776
1995	9	5,333	7,863	13,205
1996	153	3,934	12,674	16,761
1997	29	29,593	9,155	38,777
1998	376	3,804	3,069	7,249
1999	114	3	3,421	3,538
2000	22	1,091	4,447	5,560
2001	0	970	6,522	7,492
2002	0	2,231	4,827	7,058
2003	0	4,827	3,008	7,835
2004	123	5,184	1,971	7,228
2005	0	4,358	2,703	7,061
2006	0	5,278	NA	NA

Troll: Areas 6, 6A, 7, and 7A
Net: Areas 6, 6A, 7 and 7A
Sport: Area 7
NA=not available

Appendix A.10. Washington – Other Puget Sound Chinook catches, 1975-2006.

Year	Washington – Other Puget Sound		
	Net	Sport	Total
1975	131,982	173,086	305,068
1976	141,281	151,246	292,527
1977	145,470	97,761	243,231
1978	150,298	116,979	267,277
1979	128,073	156,402	284,475
1980	171,516	142,799	314,315
1981	145,152	106,048	251,200
1982	149,274	85,703	234,977
1983	134,492	123,752	258,244
1984	180,248	102,740	282,988
1985	184,907	92,603	277,510
1986	153,000	88,000	241,000
1987	127,000	59,000	186,000
1988	133,000	63,000	196,000
1989	156,000	75,000	231,000
1990	179,593	71,000	250,593
1991	89,495	48,859	138,354
1992	63,460	51,656	115,116
1993	54,968	41,034	96,002
1994	63,577	44,181	107,758
1995	63,593	61,509	125,102
1996	61,658	58,538	120,196
1997	47,522	43,961	91,483
1998	50,915	30,016	80,931
1999	91,947	34,116	126,063
2000	79,494	29,328	108,822
2001	123,266	40,170	163,436
2002	108,566	35,031	143,597
2003	86,206	32,210	118,416
2004	69,211	22,650	91,861
2005	77,878	30,760	108,638
2006	104,670	NA	NA

Net: Areas 6B, 6D, 7B, 7C, and 7E; Areas 8-13 (including all sub-areas); Areas 74C – 83F
Sport: Areas 8-13 and all Puget Sound Rivers
NA=not available

Appendix A.11. Washington – Inside Coastal Chinook catches, 1975-2006.

Year	Washington – Inside Coastal		
	Net	Sport	Total
1975	34,859	1,716	36,575
1976	51,995	2,219	54,214
1977	72,467	2,043	74,510
1978	32,662	3,399	36,061
1979	36,501	2,199	38,700
1980	47,681	1,476	49,157
1981	36,880	786	37,666
1982	33,271	1,114	34,385
1983	16,210	1,452	17,662
1984	16,239	1,319	17,558
1985	25,162	1,955	27,117
1986	29,000	3,000	32,000
1987	51,000	3,000	54,000
1988	74,000	7,000	81,000
1989	85,000	6,000	91,000
1990	57,770	5,000	62,770
1991	54,397	6,070	60,467
1992	64,223	6,577	70,800
1993	59,285	9,180	68,465
1994	46,059	7,454	53,513
1995	46,490	9,881	56,371
1996	55,408	12,059	67,467
1997	28,269	6,619	34,888
1998	20,266	6,569	26,835
1999	11,400	3,165	13,565
2000	15,660	3,179	18,839
2001	19,480	8,645	28,125
2002	23,372	6,038	29,410
2003	18,443	6,075	24,518
2004	21,965	12,088	34,053
2005	20,668	7,051	27,719
2006	29,770	NA	NA

Net: Areas 2A - 2M; Areas 72B - 73H
Sport: All coastal rivers, Area 2.1, and Area 2.2 (when Area 2 is open)
NA=not available

Appendix A.12. Washington/Oregon North of Cape Falcon Chinook catches, 1975-2006.

Year	Washington/Oregon North of Cape Falcon			
	Troll	Net	Sport	Total
1975	268,971	1,212	265,785	535,968
1976	371,239	203	215,319	586,761
1977	244,491	4	197,563	442,058
1978	150,673	4	104,306	254,983
1979	133,035	3	84,977	218,015
1980	125,709	1,215	59,099	186,023
1981	109,519	209	96,151	205,879
1982	154,720	267	114,952	269,939
1983	63,584	62	51,789	115,435
1984	15,392	0	6,980	22,372
1985	55,408	493	30,189	86,090
1986	52,000	0	23,000	75,000
1987	81,000	4,000	44,000	129,000
1988	108,000	3,000	19,000	130,000
1989	74,600	1,000	20,900	96,500
1990	65,800	0	32,900	98,700
1991	51,600	0	13,300	64,900
1992	69,000	0	18,900	87,900
1993	55,900	0	13,600	69,500
1994	4,500	0	0	4,500
1995	9,500	0	600	10,100
1996	12,300	0	200	12,500
1997	20,500	0	4,100	24,600
1998	20,615	0	2,292	22,907
1999	44,923	0	10,821	55,744
2000	20,152	0	9,242	29,394
2001	54,163	0	25,592	79,755
2002	106,462	0	60,575	167,037
2003	101,758	0	36,513	138,271
2004	88,225	0	27,090	115,315
2005	87,126	0	40,004	127,130
2006	57,288	0	11,176	68,464

Troll: OR Area 2; WA Areas 1, 2, 3 and 4: Area 4B from May 1 through Sept. 30 (during PFMC management)
Net: WA Areas 1, 2, 3, 4, 4A
Sport: OR Area 2; WA Areas 1, 1.1, 1.2, 2, 3, 4 and 2.2 (when Area 2 is open)

Appendix A.13. Columbia River Chinook catches, 1975-2006.

Year	Columbia River[1]			
	Non-treaty net	Treaty Indian	Sport	Total
1975	323,000		34,870	357,870
1976	288,400		42,527	330,927
1977	255,600		58,838	314,438
1978	189,100		56,582	245,682
1979	169,691	7,865	38,700	216,256
1980	113,569	35,604	14,860	164,033
1981	35,881	54,190	20,882	110,953
1982	94,289	65,447	30,984	190,720
1983	32,877	32,490	22,709	88,076
1984	73,481	61,112	43,498	178,091
1985	74,982	78,959	45,204	199,145
1986	168,038	116,777	57,468	342,283
1987	340,931	152,325	105,603	598,860
1988	341,114	163,295	97,922	602,331
1989	146,739	142,765	88,136	377,640
1990	63,602	91,677	78,838	234,117
1991	53,935	58,855	78,953	191,743
1992	24,063	35,072	56,581	115,716
1993	19,929	40,318	62,326	122,572
1994	2,773	36,141	29,568	68,482
1995	777	42,804	36,551	80,132
1996	17,774	67,040	32,092	116,906
1997	11,268	73,569	46,138	130,975
1998	6,464	47,579	34,571	88,614
1999	10,115	80,368	45,499	135,982
2000	21,414	62,954	48,202	132,570
2001	42,137	167,113	137,849	347,099
2002	71,969	166,175	146,937	385,081
2003	77,458	146,138	143,258	366,854
2004	79,141	152,456	146,081	377,678
2005	45,281	127,688	90,605	263,574
2006	49,264	107,765	44,077	201,106

[1] The historical time series of catches in this year's report has changed from last year's report. Catches after 1980 have been broken out into non-Treaty net and Treaty Indian due to the inability to separate commercial vs. non-commercial. Catches from 1975-1980 are consistent for sport and total with the later times series.

Appendix A.14. Oregon Chinook catches, 1975-2006.

Year	Oregon		
	Troll	Sport	Total
1975	300	19,000	19,300
1976	1,000	21,000	22,000
1977	3,000	34,000	37,000
1978	1,000	37,000	38,000
1979	800	31,000	31,800
1980	300	22,000	22,300
1981	300	28,000	28,300
1982	500	23,000	23,500
1983	700	19,000	19,700
1984	1,088	27,000	28,088
1985	1,700	25,000	26,700
1986	1,900	33,000	34,900
1987	3,600	46,000	49,600
1988	4,800	49,000	53,800
1989	4,500	45,000	49,500
1990	0	38,000	38,000
1991	0	44,500	44,500
1992	384	39,000	39,384
1993	649	52,000	52,649
1994	371	33,590	33,961
1995	206	48,366	48,572
1996	989	56,202	57,191
1997	513	37,659	38,172
1998	858	37,990	38,848
1999	1,233	30,735	31,968
2000	1,860	33,262	35,122
2001	1,184	54,988	56,172
2002	1,633	61,085	62,718
2003	1,459	67,939	69,398
2004	2,258	71,726	73,984
2005	1,956	NA	NA
2006	1,884	NA	NA

Troll: Late season off Elk River mouth.
Sport: Estuary and inland.
NA = not available.

Appendix B. Escapements and terminal runs of PSC Chinook Technical Committee wild Chinook escapement indicator stocks, 1975-2006.

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Appendix B.1. Southeast Alaska and Transboundary river escapements and terminal runs of PSC Chinook Technical Committee wild Chinook escapement indicator stocks, 1975-2006.

Southeast Alaska						
Year	Situk		King Salmon	Andrew	Blossom Index	Keta Index
	esc.	t. run	esc.	esc.	esc.	esc.
1975			62	520	146	203
1976	1,421	3,184	96	404	68	84
1977	1,732	2,981	199	456	112	230
1978	808	1,745	84	388	143	392
1979	1,284	3,089	113	327	54	426
1980	905	2,504	104	282	89	192
1981	702	1,857	139	536	159	329
1982	434	949	354	672	345	754
1983	592	1,290	245	366	589	822
1984	1,726	2,948	265	389	508	610
1985	1,521	2,916	175	640	709	624
1986	2,067	2,873	255	1,416	1,278	690
1987	1,379	2,874	196	1,576	1,349	768
1988	868	1,596	208	1,128	384	575
1989	637	1,377	240	1,060	344	1,155
1990	628	1,643	179	1,328	257	606
1991	889	2,095	134	800	239	272
1992	1,595	3,819	99	1,556	150	217
1993	952	2,558	259	2,120	303	362
1994	1,271	6,085	207	1,144	161	306
1995	4,330	14,987	144	686	217	175
1996	1,800	8,100	284	670	220	297
1997	1,878	6,601	357	586	132	246
1998	924	5,420	132	974	91	180
1999	1,461	7,208	300	1,210	212	276
2000	1,785	4,941	137	1,380	231	300
2001	656	2,317	147	2,108	204	343
2002	1,000	3,017	153	1,752	224	411
2003	2,117	6,280	117	1,190	203	322
2004	748	3,275	134	3,068	333	376
2005	613	1,171	141	2,030	445	497
2006	749		149	2178	339	747
Goal Lower	500		120	650	250	250
Goal Upper	1,000		240	1,500	500	500

(continued)

Appendix B.1. (Page 2 of 2).

Transboundary Rivers						
Year	Alsek (Klukshu) Index esc.	Taku esc.	Stikine esc.	Unuk Index esc.	Chickamin Index esc.	Chilkat esc.
1975		12,920	7,571		370	
1976	1,064	24,582	5,723		157	
1977	2,698	29,496	11,445	974	363	
1978	2,530	17,124	6,835	1,106	308	
1979	3,104	21,617	12,610	576	239	
1980	2,487	39,239	30,573	1,016	445	
1981	1,963	49,559	36,057	731	384	
1982	1,969	23,847	40,488	1,351	571	
1983	2,237	9,795	6,424	1,125	599	
1984	1,572	20,778	13,995	1,837	1,102	
1985	1,283	35,916	16,037	1,184	956	
1986	2,607	38,110	14,889	2,126	1,745	
1987	2,491	28,935	24,632	1,973	975	
1988	1,994	44,524	37,554	1,746	786	
1989	2,202	40,329	24,282	1,149	934	
1990	1,698	52,143	22,619	591	564	
1991	2,223	51,645	23,206	655	487	5,897
1992	1,243	55,889	34,129	874	346	5,284
1993	3,221	66,125	58,962	1,068	389	4,472
1994	3,620	48,368	33,094	711	388	6,795
1995	5,397	33,805	16,784	722	356	3,790
1996	3,382	79,019	28,949	1,167	422	4,920
1997	2,829	114,938	26,996	636	272	8,100
1998	1,347	31,039	25,968	840	391	3,675
1999	2,166	19,734	19,947	680	492	2,271
2000	1,321	30,529	27,531	1,341	801	2,035
2001	1,738	42,980	63,523	2,019	1,010	4,517
2002	2,141	52,409	50,875	897	1,013	4,051
2003	1,661	36,435	46,824	1,121	964	5,657
2004	2,455	68,199	48,900	1,008	798	3,422
2005	963	39,007	44,033	929	924	3,366
2006	561	39,632	20,600	679	1,330	3,027
Goal Lower	1,100	30,000	14,000	650	450	1,750
Goal Upper	2,300	55,000	28,000	1,400	900	3,500

Appendix B.2. Canadian escapements and terminal runs of PSC Chinook Technical Committee wild Chinook escapement indicator stocks, 1975-2006.

Year	Northern B.C.								
	Area 1 Yakoun	Area 3[1] Nass			Area 4 Skeena		Area 8 Dean	Area 9 Rivers	Area 10 Smith
	esc.	Above GW[1]	Total esc.	t. run	esc.	t. run	Index	Inlet	Inlet
1975	1,500		14,895	17,874	20,319			3,280	960
1976	700		13,819	16,583	13,078			1,640	1,000
1977	800	13,688	14,288	18,410	29,018	39,606		2,225	1,050
1978	600	15,485	16,885	21,807	22,661	35,055	3,500	2,800	2,100
1979	400	11,253	12,783	16,229	18,488	28,166	4,000	2,150	500
1980	600	13,476	14,855	18,744	23,429	38,626	2,000	2,325	1,200
1981	750	12,625	13,925	17,606	24,523	42,018	3,500	3,175	1,020
1982	1,400	7,959	10,359	13,287	17,092	35,185		2,250	1,500
1983	600	13,252	16,301	20,516	23,562	39,510	500	3,320	1,050
1984	300	20,967	24,967	31,408	37,598	53,516	4,500	1,400	770
1985	1,500	17,782	19,694	24,768	53,599	76,544	4,000	3,371	230
1986	500	36,523	38,123	47,967	59,968	87,566	3,300	7,623	532
1987	2,000	19,540	20,986	26,568	59,120	76,349	1,144	5,239	1,050
1988	2,000	15,345	16,715	21,094	68,705	102,563	1,300	4,429	1,050
1989	2,800	28,133	29,175	36,594	57,202	83,439	2,300	3,265	225
1990	2,000	24,051	26,551	33,384	55,976	89,447	2,000	4,039	510
1991	1,900	6,907	8,259	13,136	52,753	79,343	2,400	6,635	500
1992	2,000	16,808	17,408	25,405	63,392	92,184	3,000	7,500	500
1993	1,000	24,814	26,508	36,678	66,977	96,018	700	10,000	500
1994	2,000	21,169	25,689	32,864	48,712	68,127	1,300	3,500	700
1995	1,500	7,844	8,776	16,187	34,390	48,351	1,100	3,196	400
1996	3,000	21,842	22,712	30,889	73,684	96,453	2,000	3,000	250
1997	2,500	18,702	20,584	27,658	42,539	65,350	1,400	4,980	100
1998	3,000	23,213	25,361	34,922	46,744	65,167	3,000	5,367	1,100
1999	3,200	11,544	13,118	22,310	43,775	70,993	1,800	2,739	500
2000	3,600	18,912	20,565	31,159	51,804	77,320	1,200	6,700	500
2001	3,500	29,687	31,915	44,595	81,504	112,346	3,795	5,062	300
2002	3,000	13,773	15,382	21,528	44,771	63,069	3,731	5,031	-[2]
2003	4,000	26,940	28,330	36,503	56,758	82,410	3,700	1,900	-[2]
2004	4,500	15,912	18,185	25,137	44,243	61,065	3,500	3,950	-[2]
2005	5,000	14,901	16,595	24,067	29,067	39,278	2,200	5,585	-[2]
2006	5,000	24,725	27,743	37,098	33,094	43,689	3,700	3,930	-[2]

[1] GW refers to Gitwinksihlkw, the location of the lower fish wheels on the Nass River used to capture Chinook for the mark-recapture estimate

[2] The Docee River was dropped as an escapement indicator due to an inability to obtain reliable escapement estimates

Appendix B.2. (Page 2 of 2).

	Southern B.C.				Fraser River						
Year	W. Coast Vancouver Island esc.	Lower Strait of Georgia esc.	Lower Strait of Georgia t. run	Upper Strait of Georgia esc.	Fraser Spring Age 1.2 esc.	Fraser Spring Age 1.3 esc.	Fraser Summer Age 0.3 esc.	Fraser Summer Age 1.3 esc.	Fraser Spr/sum t. run	Harrison esc.	Harrison t. run
1975	800	5,475	6,390		7,179	8,184	26,875	16,875	119,081		
1976	1,075	4,340	5,390		4,600	10,307	4,925	13,630	98,691		
1977	1,835	6,530	7,590	3,880	3,675	13,261	19,600	17,240	132,553		
1978	2,750	6,495	7,035	6,150	4,305	15,725	16,700	19,200	109,119		
1979	2,048	10,686	11,209	4,127	2,770	14,985	18,275	10,205	101,252		
1980	5,974	8,819	10,519	1,367	6,255	16,521	8,350	13,625	71,504		
1981	5,050	6,007	7,607	1,945	2,975	12,274	13,120	12,202	62,668		
1982	6,812	6,186	6,657	3,260	5,510	15,010	6,850	15,088	85,140		
1983	2,700	6,582	6,862	3,770	2,641	24,225	9,500	16,604	72,526		
1984	3,862	8,456	8,861	4,600	6,380	30,370	15,522	13,595	95,681	120,837	131,740
1985	3,700	4,589	5,242	4,600	9,477	43,168	20,375	19,099	121,941	174,778	181,367
1986	2,760	3,105	3,776	1,630	10,275	48,446	22,460	32,505	144,617	162,596	177,662
1987	2,570	3,276	3,781	6,450	5,049	48,271	22,404	27,646	128,699	79,038	81,799
1988	4,560	7,957	8,638	3,300	4,003	41,783	29,567	32,066	129,587	35,116	38,285
1989	6,220	7,087	8,142	5,550	6,126	31,994	24,200	16,200	106,843	74,685	76,294
1990	3,660	7,023	7,627	2,320	3,225	41,560	25,425	33,747	135,124	177,375	180,837
1991	5,060	8,343	8,613	3,340	3,495	27,296	26,250	28,097	116,555	90,638	93,363
1992	4,830	11,377	11,637	5,268	5,937	33,038	32,200	38,011	130,249	130,411	132,042
1993	4,530	8,435	8,730	1,574	7,870	32,796	13,300	21,385	110,237	118,998	120,600
1994	4,080	7,479	7,824	1,237	10,696	51,655	25,350	23,657	145,303	98,334	100,839
1995	3,710	18,749	19,282	4,227	9,670	45,237	20,550	26,371	134,478	28,616	29,840
1996	6,026	16,465	17,275	3,600	20,726	38,398	50,900	43,142	185,559	37,394	38,568
1997	7,197	11,745	11,936	5,266	9,878	44,373	49,250	40,882	202,795	70,514	72,061
1998	11,643	7,658	8,731	10,350	3,003	37,862	68,033	36,750	169,333	188,425	189,103
1999	10,186	8,481	8,714	9,500	8,751	20,740	53,204	25,138	140,939	107,016	107,884
2000	4,675	8,084	8,223	12,850	11,731	26,773	45,161	25,869	155,209	77,035	78,098
2001	2,737	7,463	8,569	9,885	10,607	31,512	74,132	33,980	177,008	73,134	74,419
2002	4,036	5,862	7,812	12,865	16,423	42,408	85,132	34,886	221,020	89,968	91,122
2003	4,456	5,028	5,903	13,978	17,137	45,441	70,164	44,451	231,689	247,121	251,453
2004	8,491	3,271	3,641	13,365	12,156	31,614	53,764	30,980	194,440	135,895	138,890
2005	3,969	3,503	4,870	13,365	3,898	21,458	88,329	18,586	172,281	86,730	92,993
2006	4,231	3,910	4,880	961	6,642	21,590	149,928	20,565	242,769	50,942	57,965
Goal LL										75,100	
Goal UL										98,500	

Appendix B.3. Puget Sound escapements and terminal runs of PSC Chinook Technical Committee wild Chinook escapement indicator stocks, 1975-2006.

Year	Puget Sound													
	Skagit Spring		Skagit Sum/fall		Stillaguamish		Snohomish		Green		Nooksack Spring esc.		Lake Washington Fall	
	esc.	t. run	esc.	t. run	esc.	t. run	esc.	t. run	esc.	t. run	N. Fork	S. Fork	esc.	t. run
1975	627	627	11,320	24,625	1,198	1,635	4,485	6,123	3,394	6,238			656	881
1976	633	633	14,120	23,306	2,140	4,002	5,315	9,889	3,140	7,732			719	759
1977	520	520	9,218	17,994	1,475	2,549	5,565	9,618	3,804	5,366			675	728
1978	932	932	13,075	20,030	1,232	1,959	7,931	12,591	3,304	4,349			890	1,202
1979	818	818	13,306	21,443	1,042	2,366	5,903	12,706	9,704	10,730			1,289	1,430
1980	1,408	1,408	20,058	28,938	821	2,647	6460	16,688	7743	10,608			1360	1,431
1981	1,045	1,045	8,283	19,675	630	2,783	3368	8,968	3606	4,912			721	792
1982	753	753	9,910	20,722	773	3,058	4379	8,470	1840	3,850			885	1,148
1983	554	554	8,723	14,671	387	925	4549	10,386	3679	13,290			1332	2,124
1984	696	696	12,628	15,005	374	883	3762	8,480	3353	5,381	45	188	1252	3,436
1985	2,634	2,634	16,002	25,075	1,223	2,455	4,873	9,005	2,908	7,444	258	445	949	2,305
1986	1,922	1,922	17,908	21,585	1,277	2,416	4,534	8,267	4,792	5,784	226	170	1,470	2,419
1987	1,745	1,745	9,409	13,037	1,321	1,906	4,689	6,670	10,338	11,724	181	248	2,038	4,124
1988	1,743	1,743	11,468	14,647	726	1,185	4,513	7,389	7,994	9,207	456	233	792	2,373
1989	1,400	1,809	6,684	12,787	811	1,642	3,138	6,142	11,512	15,000	303	606	1,011	1,688
1990	1,511	1,546	16,792	19,172	842	1,739	4,209	8,345	7,035	15,200	10	142	787	1,128
1991	1,236	1,273	5,824	8,423	1,632	2,913	2,783	4,964	10,548	14,967	108	365	661	1,415
1992	986	1,010	7,348	9,201	780	1,247	2,708	4,319	5,267	9,941	498	103	790	1,349
1993	782	812	5,801	6,879	928	1,299	3,866	5,602	2,476	5,202	449	235	245	304
1994	470	496	5,656	6,586	954	1,285	3,626	4,885	4,078	7,963	45	118	888	891
1995	855	887	6,985	9,209	822	920	3,176	5,000	7,939	9,743	230	290	930	944
1996	1,051	1,078	10,706	12,286	1,244	1,244	4,851	7,921	6,026	8,668	534	203	336	341
1997	1,041	1,064	4,951	6,134	1,156	1,167	4,292	4,334	11,800	12,097	570	180	294	296
1998	1,086	1,091	14,700	14,976	1,540	1,558	6,304	6,344	9,115	10,627	368	157	697	697
1999	471	476	5,002	5,249	1,098	1,101	4,799	4,817	13,173	14,595	823	166	778	778
2000	1,021	1,025	17,024	17,206	1,647	1,647	6,092	8,400	10,526	16,222	1,245	284	347	347
2001	1,856	1,866	13,868	14,081	1,312	1,351	8,164	8,395	21,402	24,594	2,209	267	1,269	1,516
2002	1,076	1,092	19,671	19,887	1,636	1,641	7,220	7,245	14,857	16,460	3,741	289	637	647
2003	909	987	9,964	10,946	1,067	1,095	6,211	6,364	10,405	12,765	2,857	204	771	800
2004	1,622	1,622	23,750	24,241	1,506	1,531	10,606	10,780	13,991	20,631	2,064	130	730	773
2005	1,305	1,305	20,803	23,396	963	991	4,484	4,611	4,089	4,708	2,047	120	726	786
2006	1,919	1,919	20,819	21,196	1,254	1,268	8,308	8,402	10,517	14,141	1,916	355	1,219	1,245

Appendix B.4. Washington Coast escapements and terminal runs of PSC Chinook Technical Committee wild Chinook escapement indicator stocks, 1976-2006.

Year	Washington Coast																	
	Quillayute Summer		Quillayute Fall		Hoh Spr/Sum		Hoh Fall		Hoko Fall		Queets Spr/Sum		Queets Fall		Grays Harbor Spring		Grays Harbor Fall	
	esc.	t. run	esc.	t. run	esc.	t. run	esc.	t. run	esc.	t. run	esc.	t. run	esc.	t. run	esc.	t. run	esc.	t. run
1976	1,300	1,700			600	1,300	2,500	3,100			505	737			600	1,000	1,836	10,313
1977	3,800	5,300			1,000	2,000	2,100	3,800			732	1,155			800	1,700	5,195	14,400
1978	2,300	2,700			1,400	2,472	1,900	2,900			1,110	1,406			1,000	1,600	4,555	8,372
1979	2,100	3,900			1,400	2,326	1,700	2,200			870	1,369			400	1,100	9,381	10,101
1980	964	1,500	6,700	7,600	800	1,079	2,200	2,800			1,038	1,213	3,200	5,800	200	600	11,656	21,639
1981	815	1,700	5,963	7,102	1,498	2,005	3,100	4,000			988	1,329	4,300	8,000	600	900	7,577	11,915
1982	1,126	2,700	7,107	9,651	1,553	2,125	4,500	5,800			781	1,244	4,100	6,200	610	669	5,606	13,296
1983	548	1,800	3,069	5,530	1,696	2,233	2,500	3,300			1,044	1,173	2,600	3,800	800	850	5,482	8,997
1984	618	1,000	9,128	10,447	1,430	2,005	1,900	2,600			958	1,189	3,900	5,300	1,128	1,130	21,058	22,616
1985	550	700	6,145	8,367	978	1,353	1,725	2,720			677	886	3,702	5,153	1,157	1,159	9,537	15,153
1986	853	1,000	10,006	13,380	1,248	1,912	4,981	6,000	801	839	925	1,193	7,805	8,890	1,795	1,826	13,771	21,327
1987	666	1,600	12,352	20,349	1,710	2,480	4,006	6,147	581	606	598	1,543	6,504	10,045	841	1,071	11,861	30,745
1988	2,599	3,943	15,168	22,115	2,605	3,708	4,128	6,873	784	821	1,765	2,267	8,390	11,000	3,106	3,208	28,158	37,807
1989	2,407	3,472	9,951	17,260	4,697	6,820	5,148	8,682	845	862	2,568	3,954	8,689	11,154	2,068	2,393	25,677	57,814
1990	1,483	1,840	13,711	16,914	3,886	5,294	4,236	6,327	493	498	1,780	2,480	10,103	12,297	1,567	1,630	16,995	37,261
1991	1,188	1,500	6,292	7,631	1,078	1,693	1,420	2,628	1,008	1,024	630	761	4,486	5,888	1,289	1,489	14,392	30,300
1992	1,009	1,271	6,342	7,750	1,018	1,443	4,003	5,139	741	750	375	505	4,695	6,338	1,813	1,851	16,592	28,366
1993	1,292	1,531	5,254	5,735	1,411	2,065	2,280	3,951	894	908	713	788	3,383	5,107	1,254	1,399	13,349	26,474
1994	974	1,187	4,932	5,692	1,699	2,372	3,967	4,322	429	440	705	727	3,805	5,866	1,403	1,479	14,320	27,098
1995	1,333	1,731	5,532	6,716	1,132	1,686	2,202	2,912	929	949	625	662	2,876	4,355	2,070	2,156	12,727	27,160
1996	1,170	1,388	7,316	9,293	1,371	2,083	3,022	4,061	1,256	1,258	776	891	3,441	4,693	4,462	4,655	20,227	30,375
1997	890	1,177	5,405	6,047	1,826	2,582	1,773	3,034	868	888	540	693	2,477	4,122	4,460	4,812	18,618	28,992
1998	1,599	1,829	6,752	7,940	1,287	1,880	4,257	5,388	1,702	1,702	492	537	3,951	5,009	955	1,257	12,529	18,555
1999	713	818	3,334	4,758	928	1,081	1,924	2,941	1,550	1,550	373	426	1,933	2,885	1,285	1,577	10,363	12,037
2000	989	1,149	3,730	4,794	492	529	1,749	2,632	730	730	248	250	3,572	3,752	3,135	3,424	8,088	13,215
2001	1,225	1,399	5,136	7,545	1,159	1,231	2,560	4,116	838	838	548	565	2,859	4,222	2,860	3,326	8,340	17,169
2002	1,002	1,100	6,067	9,512	2,464	3,375	4,415	5,716	680	680	738	755	1,938	4,250	2,598	3,217	10,126	13,541
2003	1,219	1,308	7,398	9,469	1,228	1,646	1,649	2,319	1,098	1,098	189	195	4,993	5,978	1,904	2,111	17,808	19,010
2004	1,093	1,153	3,912	6,133	1,786	2,239	3,211	4,410	1,088	1,088	604	619	3,523	4,324	5,034	5,335	27,853	32,830
2005	945	1,035	6,406	8,319	1,193	1,408	4,194	5,351	955	955	298	306	3,076	4,332	2,130	2,683	17,040	23,078
2006	553	604	5,970	8,246	904	1,061	1,632	2,414	880	880	330	336	2,338	3,352	2,481	2,870	16,197	23,983
Goal			3,000		900		1,200				700		2,500					

Appendix B.5. Columbia River escapements and terminal runs of PSC CTC wild Chinook escapement indicator stocks, 1975-2006.

Year	Columbia Upriver Spring		Columbia Upriver Summers /1						Columbia Upriver Fall Chinook						
			Mid-Columbia		Snake River		Total		Lewis River /2		Deschutes River /3			Brights /4	
	esc.	t. run	esc.	t. run	esc.	t. run	esc.	t. run	esc.	t. run	esc.	esc.	t. run	esc.	t. run
1975									13,859	13,859	Mark	Above Falls		29,600	164,509
1976									3,371	3,371	Recapture	Expanded		27,700	109,726
1977									6,930	6,930		7,484	9,345	35,600	85,755
1978									5,363	5,363		5,049	7,020	25,800	78,280
1979	31,314	32,566	16,355	17,238	2,714	4,116	19,069	21,353	8,023	8,023		4,091	5,683	28,700	83,517
1980	32,775	33,876	16,583	17,494	2,688	2,919	19,271	20,413	16,394	16,856		3,159	5,110	27,700	71,690
1981	34,235	36,091	11,826	12,741	3,306	4,474	15,132	17,215	19,297	20,298		4,085	5,922	18,114	60,678
1982	39,598	42,589	8,271	9,151	4,210	4,745	12,481	13,896	8,370	10,126		7,406	9,422	27,226	69,578
1983	31,559	32,962	7,705	7,932	3,895	4,576	11,600	12,508	13,540	14,489		4,681	6,177	42,681	79,923
1984	25,171	27,039	12,369	12,689	5,429	5,079	17,798	17,768	7,132	8,128		4,404	5,374	45,452	126,026
1985	32,292	33,480	12,276	13,257	5,062	3,885	17,338	17,142	7,491	8,241		3,785	4,592	72,758	191,808
1986	40,550	43,113	10,640	11,361	6,154	5,824	16,794	17,185	11,983	13,504		5,355	6,508	90,961	275,061
1987	34,980	37,286	13,769	14,931	5,891	7,519	19,660	22,450	12,935	14,173		6,776	8,833	121,171	411,823
1988	32,405	34,885	12,527	13,442	6,145	8,304	18,672	21,747	12,059	13,636		5,982	8,373	97,781	331,542
1989	32,346	35,045	17,071	17,179	3,169	3,397	20,240	20,577	21,199	22,813		4,777	6,507	83,100	254,795
1990	30,189	32,439	12,883	12,976	5,093	5,123	17,976	18,099	17,506	18,784		2,224	3,194	48,891	150,399
1991	19,969	21,308	9,383	9,504	3,809	3,510	13,192	13,015	9,066	10,354		3,678	3,832	39,625	99,454
1992	33,478	35,670	6,133	6,200	3,014	3,125	9,147	9,325	6,307	7,129		2,777	2,814	38,879	78,202
1993	29,349	31,280	8,962	9,235	7,889	4,520	16,851	13,755	7,025	8,106		8,235	8,246	41,853	94,662
1994	9,047	9,530	11,768	11,967	795	907	12,563	12,874	9,939	10,541		5,455	5,524	66,470	127,315
1995	4,681	4,928	9,081	9,419	692	841	9,773	10,260	9,718	12,155		7,581	7,617	53,470	98,842
1996	18,352	19,373	7,589	7,873	2,607	2,832	10,196	10,704	13,971	13,971		8,759	8,837	51,973	134,356
1997	16,719	17,924	8,362	8,508	10,709	7,536	19,071	16,043	8,670	8,670		20,678	20,811	49,074	140,916
1998	17,002	17,919	9,525	9,757	4,355	4,739	13,880	14,496	5,929	5,929		10,923	11,428	40,012	130,874
1999	10,246	10,747	16,634	17,010	3,260	3,514	19,894	20,524	3,184	3,184		3,997	4,370	44,867	161,436
2000	49,350	52,554	16,901	17,092	3,933	4,017	20,834	21,109	9,820	9,820		3,230	3,637	62,675	152,107
2001	93,464	107,747	38,708	39,295	13,735	14,623	52,443	53,918	13,886	14,186	9,527	11,161	9,861	86,908	222,630
2002	74,086	83,218	67,676	71,607	22,159	20,104	89,835	91,711	16,380	18,230	11,133	12,252	12,103	116,237	265,166
2003	62,954	68,408	58,613	65,367	16,422	16,672	75,035	82,039	18,505	20,505	14,265	12,590	15,343	160,677	357,848
2004	57,748	63,331	44,536	53,674	8,813	10,206	53,349	63,879	15,342	17,133	10,197	11,879	11,421	150,440	356,437
2005	30,716	32,802	39,138	50,505	6,736	7,585	45,874	58,090	11,348	13,348	9,355	13,550	10,190	112,679	258,554
2006	36,302	38,911	38,056	60,266	7,058	12,173	45,114	72,440	10,522	11,999	14,196	13,374	14,196	76,898	216,192
Goal			17,857						5,700					40,000	

1/ Columbia Upriver Summers are a single escapement indicator stock with an agency management goal of 85,000 Mid-Columbia summers and Snake River summers exhibit different life history types Only Mid-Columbia is included in the model stock Based on a S-R analysis of model data, the interim goal for Mid-Columbia Summers is 17,857 until better data can be compiled

2/ This is the number of naturally spawning adult fish in the Lewis River The terminal run given is the escapement plus the Lewis River sport catch of wild adults

3/ The first column is based on a mark-recapture project for the entire river The second column is based on using the ratio of redds above and below Sherar's Falls The agencies' management goal is 4000

4/ The CRFMP stated an interim escapement goal of 40,000 natural spawning URBs at McNary Dam, including 38,700 for Hanford Reach and 1,100 Snake River In 1990, the escapement goal was increased to 45,000 for increased hatchery programs In 1994, a management goal of 46,000 was established, and in 1995, the management goal was retained while the escapement goal was reduced to 43,500 In 2002, the CRFMP escapement goal of 40,000 was agreed to by the CTC Escapement numbers given are McNary adult dam count minus adult sport and broodstock above the dam The terminal run is the Columbia River mouth terminal run of Upriver Brights minus the Deschutes River fall Chinook terminal run

Appendix B.6. Oregon Coastal escapements as estimated via traditional habitat expansion methods and terminal runs of PSC Chinook Technical Committee wild Chinook salmon escapement indicator stocks, 1975-2006.

Year	Oregon							
	Nehalem		Siletz		Siuslaw		Coquille	
	esc.	t. run	esc.	t. run	esc.	t. run	esc.	t. run
1975	5,197	5,303	2,062	2,689	4,427	4,548	4,927	NA
1976	9,807	9,908	1,326	2,036	7,999	8,153	2,188	NA
1977	11,478	12,093	3,314	3,919	9,492	10,362	4,379	NA
1978	12,059	12,244	2,062	3,700	5,872	6,879	3,951	5,290
1979	12,205	12,469	7,217	8,907	8,040	8,799	4,030	4,715
1980	5,555	5,832	3,680	4,820	10,630	11,183	4,014	4,622
1981	10,752	10,939	4,435	6,751	8,724	9,342	4,313	4,996
1982	5,085	5,282	3,415	4,514	10,870	11,774	6,249	6,865
1983	4,431	4,525	2,136	3,152	4,186	4,885	3,193	3,807
1984	20,341	21,623	3,461	4,552	11,168	12,437	4,502	5,164
1985	18,670	19,473	6,628	7,685	14,822	15,805	3,157	3,853
1986	10,389	11,920	6,748	7,799	14,844	15,965	4,470	5,125
1987	13,560	15,725	4,577	6,023	17,603	19,411	5,640	6,997
1988	14,889	17,185	7,805	9,257	41,746	44,380	7,451	8,635
1989	10,389	12,000	4,401	5,980	28,279	31,690	6,462	7,820
1990	5,104	6,789	4,313	5,373	26,799	29,593	6,064	7,567
1991	5,557	7,685	5,633	6,926	26,100	29,825	9,074	11,470
1992	9,060	11,863	6,044	7,460	26,090	28,350	13,293	15,911
1993	5,345	9,317	4,342	6,506	10,446	14,012	6,993	10,419
1994	6,486	9,412	10,475	12,188	23,570	25,890	6,698	8,696
1995	5,194	8,845	5,164	8,045	26,715	31,194	7,885	10,374
1996	9,211	13,285	7,394	10,274	33,051	39,705	6,346	8,790
1997	10,026	13,069	3,726	6,165	22,305	27,516	6,743	8,338
1998	8,245	10,869	5,516	7,175	24,708	28,882	9,930	12,680
1999	8,063	10,632	4,166	6,232	23,963	27,271	8,513	10,950
2000	6,855	9,119	6,787	9,462	15,730	19,588	6,684	8,974
2001	11,662	15,998	10,563	14,704	38,717	43,836	8,233	12,007
2002	18,089	22,657	14,054	19,019	41,058	47,905	11,848	15,578
2003	10,906	15,095	11,149	15,693	57,795	65,044	16,482	21,572
2004	9,975	14,792	3,902	10,419	34,427	40,456	11,346	14,041
2005	7,038	8,459	6,426	8,727	16,619	18,303	5,029	5,767
2006	4,711	NA	4,108	NA	28,082	NA	3,009	NA
Goal	6,989		2,944		12,925		pending	

Appendix B.7. Oregon Coastal escapements and terminal runs as estimated by mark-recapture calibrated indexes of PSC Chinook Technical Committee wild Chinook salmon escapement indicator stocks, 1975-2006.

	OREGON						
Year	Nehalem		Siuslaw		Umpqua S. Fork	Coquille	
	esc.	t. run	esc.	t. run	esc.[1]	Esc.	t. run
1975	4,954	5,060	2,567	2,567	NA	6,668	NA
1976	9,345	9,446	4,565	4,565	NA	2,766	NA
1977	10,937	11,552	4,531	4,531	NA	5,676	NA
1978	11,491	11,676	2,867	3,874	400	5,618	6,957
1979	11,794	12,058	3,554	4,313	NA	5,203	5,888
1980	5,368	5,645	5,483	6,036	697	5,952	6,560
1981	10,390	10,577	3,767	4,385	890	6,405	7,088
1982	4,914	5,111	5,094	5,998	1,011	8,885	9,501
1983	4,282	4,376	923	1,622	1,628	4,686	5,300
1984	19,657	20,939	3,384	4,653	2,594	6,229	6,891
1985	18,042	18,845	6,845	7,828	2,246	4,498	5,194
1986	10,039	11,570	6,513	7,634	1,573	5,642	6,297
1987	13,103	15,268	5,568	7,376	2,795	6,429	7,786
1988	14,388	16,684	14,935	17,569	3,778	8,389	9,573
1989	10,039	11,650	12,856	16,267	6,162	6,948	8,306
1990	4,932	6,617	13,662	16,456	3,761	7,738	9,241
1991	5,370	7,498	15,709	19,434	6,717	10,508	12,904
1992	8,755	11,558	13,221	15,481	8,149	16,636	19,254
1993	5,165	9,137	2,960	6,526	3,364	7,446	10,872
1994	6,268	9,194	9,477	11,797	7,128	6,866	8,864
1995	5,020	8,671	10,246	14,725	11,388	12,060	14,549
1996	8,901	12,975	15,788	22,442	10,019	7,618	10,062
1997	9,689	12,732	8,313	13,524	7,286	8,580	10,175
1998	7,967	10,591	5,456	9,630	1,104	11,877	14,627
1999	7,792	10,361	11,785	15,093	1,804	10,653	13,090
2000	8,553	10,817	4,648	8,506	3,140	7,880	10,170
2001	9,957	14,293	16,814	21,933	6,510	12,512	16,286
2002	15,984	20,552	19,400	26,247	3,831	13,675	17,405
2003	19,380	23,569	24,596	31,845	8,918	18,876	23,966
2004	9,639	14,456	22,596	28,625	7,487	11,668	14,363
2005	6,801	8,222	12,116	13,800	3,084	5,438	6,176
2006	11,938	NA	6,965	NA	2,396	7,438	NA
Goal	pending		pending		pending	pending	

1/Preliminary analysis has shown that terminal catch of S Fork Umpqua fall Chinook is unsubstantial

Appendix C. Relationship between exploitation rate indicator stocks, escapement indicator stocks, model stocks, and additional management action stocks identified in the PST annex.

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Appendix C.1. Indicator stocks for Southeast Alaska and Transboundary Rivers.

Area	Annex Stock Group[1]	Annex Indicator Stocks	Run Type	Escapement Indicator Stock	Escapement Objective	Model Stock	Escapement Goal in Model	Exploitation Rate Indicator Stock	CWT Acronym
SEAK/TBR			Spring	Taku	30,000–55,000	Alaska South SE	9,110	NA	AKS
				Stikine	14,000–28,000			NA	
Yakutat				Situk	500–1,000			NA	
				Alsek	1,100–2,300			NA	
SEAK Northern Inside				Chilkat	1,750-3,500			NA	
				King Salmon	120–240			Alaska Spring (Little Port Walter, Neets Bay Hatchery, Whitman Lake Hatchery, Carroll Inlet Releases, Deer Mountain Hatchery, Crystal Lake Hatchery)	
SEAK Central Inside				Andrew Creek	650–1,500				
SEAK Southern Inside				Unuk	650–1,400				
				Chickamin	450–900				
				Blossom	250–500				
				Keta	250–500				

[1] SEAK fisheries will be managed to achieve escapement objectives for Southeast Alaska and Transboundary River Chinook stocks

NA = not available

Appendix C.2. Indicator stocks for Canada.

Area	Annex Stock Group	Annex Indicator Stocks	Run Type	Escapement Indicator Stock	Escapement Objective	Model Stock	Escapement Goal in Model	Exploitation Rate Indicator Stock	CWT Acronym
NBC-Area 1	North / Central British Columbia	Yakoun	Summer	Yakoun	Escapement goal range by stock	North / Central BC	117,500	Ktsumkalum	KLM
NBC-Area 3		Nass	Spring/Summer	Nass					
NBC-Area 4		Skeena		Skeena					
CBC-Area 8			Spring	Dean					
CBC-Area 9			Spring/Fall	Rivers Inlet					
WCVI	West Coast Vancouver Island Falls	Artlish, Burman, Gold, Kaouk, Tahsis, Tashish, Marble	Fall	WCVI Aggregate (Artlish, Burman, Kaouk, Tahsis, Tashish, Marble)	Escapement goal range for aggregate	WCVI Natural	42,734	Robertson Creek	RBT
						WCVI Hatchery	6,472		
Upper Strait of Georgia	Upper Strait of Georgia	Klinaklini, Kakweekan, Wakeman, Kingcome, Nimpkish	Summer/ Fall	Upper Strait of Georgia (Klinaklini, Kakweekan, Wakeman, Kingcome, Nimpkish)	Escapement goal range for aggregate	Upper Strait of Georgia	23,300	Quinsam	QUI
Lower Strait of Georgia	Lower Strait of Georgia		Summer/ Fall			Lower Strait of Georgia Hatchery	5,318	Puntledge	PPS
								Big Qualicum	BQR
		Cowichan, Nanaimo	Fall	Lower Strait of Georgia (Cowichan / Nanaimo)	Escapement goal range for aggregate	Lower Strait of Georgia Natural	21,935		
								Cowichan	COW
Fraser River	Fraser Early	Upper Fraser Mid Fraser Thompson	Spring	Fraser Spring-run Age 1.2	Escapement goal range by stock	Fraser Early	93,700	NA	
				Fraser Spring-run Age 1.3					
			Summer	Fraser Summer-run Age 1.3					
				Fraser Summer-run Age 0.3					
	Fraser Late	Harrison River	Fall	Harrison River	75,100-98,500	Fraser Late	75,100	Chilliwack	CHI

Appendix C.3. Indicator stocks for Puget Sound.

Area	Annex Stock Group	Annex Indicator Stocks	Run Type	Escapement Indicator Stock	Escapement Objective	Model Stock	Escapement Goal in Model	Exploitation Rate Indicator Stock	CWT Acronym
North/ Central Puget Sound	North Puget Sound Natural Springs	Nooksack	Spring	Nooksack	Escapement goal range by stock	Nooksack Spring	4,000	Nooksack Spring Fingerling	NKF
								Nooksack Spring Yearling	NKS
		Skagit		Skagit spring				Skagit Spring Fingerling	SKF
								Skagit Spring Yearling	SKS
	North Puget Sound Natural Summer/Falls	Nooksack	Summer/ Fall		Escapement goal range by stock	Nooksack Fall	11,923	Samish Fall Fingerling	SAM
		Snohomish		Snohomish		Snohomish Wild	5,250	NA	
		Skagit group		Skagit sum/fall		Skagit Wild	9,778	Skagit Summer Fingerling	SSF
		Lake Washington		Lake Washington Falls		Puget Sound Natural Fingerling	16,966	NA	
		Green River		Green River					
		Stillaguamish		Stillaguamish		Stillaguamish Wild	2,000	Stillaguamish Fall Fingerling	STL
								Nisqually Fall Fingerling	NIS
								Univ of Washington Accelerated Fall	UWA
Hood Canal	Not an Annex stock		Fall					George Adams Fall Fingerling	GAD
South Puget Sound	Not an annex stock		Fall			Puget Sound Hatchery Fingerling	24,769	South Puget Sound Fall Fingerling	SPS
						Puget Sound Hatchery Yearling	9,136	South Puget Sound Fall Yearling	SPY
								Squaxin Pens Fall Yearling	SQP
			Spring					White River Spring Yearling	WRY

NA = not available

Appendix C.4. Indicator stocks for the Washington Coast.

Area	Annex Stock Group	Annex Indicator Stocks	Run Type	Escapement Indicator Stock	Escapement Objective	Model Stock	Escapement Goal in Model	Exploitation Rate Indicator Stock	CWT Acronym
WA Coast/ Juan de Fuca	Washington Coastal Fall Naturals	Hoko	Fall	Hoko	Escapement goal range by stock	Washington Coastal Wild	21,500	Elwha Fall Fingerling	ELW
								Hoko Fall Fingerling	HOK
		Grays Harbor		Grays Harbor Fall				NA	
		Queets		Queets Fall				Sooes Fall Fingerling	SOO
		Hoh		Hoh Fall				NA	
		Quillayute		Quillayute Fall				NA	
		Queets		Queets Fall				Queets Fall Fingerling	QUE
	Not an annex stock		Fall			Washington Coastal Hatchery	6,703	NA	
	Not an annex stock		Spring	Grays Harbor Spring				NA	
	Not an annex stock		Spring/ Summer	Queets Spring/Summer				NA	
				Hoh Spring/Summer				NA	
	Not an annex stock		Summer	Quillayute Summer				NA	

NA = not available

Appendix C.5. Indicator stocks for Columbia River and Oregon Coast.

Area	Annex Stock Group	Annex Indicator Stocks	Run Type	Escapement Indicator Stock	Escapement Objective	Model Stock	Escapement Goal in Model	Exploitation Rate Indicator Stock	CWT Acronym
Columbia River	Not an Annex stock		Spring			Cowlitz Spring Hatchery	2,500	NA	
						Willamette River Hatchery	13,500	Willamette Spring	WSH
	Columbia River Summers	Mid-Columbia Summers	Summer	Mid Columbia Summer	17,857[1]	Columbia River Summer	17,857	Columbia Summers	SUM
	Columbia River Falls		Fall			Fall Cowlitz Hat	8,800	Cowlitz Tule	CWF
						Spring Creek Hatchery	7,000	Spring Creek Tule	SPR
						Lower Bonneville Hatchery	26,200	Columbia Lower River Hatchery	LRH
		Upriver Brights		Columbia Upriver Bright		Columbia Upriver Brights	40,000	Columbia Upriver Bright	URB
								Hanford Wild	HAN
		Deschutes		Deschutes River Fall				NA	
						Lyons Ferry	3,430	Lyons Ferry	LYF
						Mid Columbia River Brights	12,500	NA	
		Lewis River		Lewis	5,700	Lewis River Wild	5,700	Lewis River Wild	LRW
North Oregon Coast	Far North Migrating Oregon Coastal Falls	Nehalem	Fall	Nehalem	6,989	Oregon Coast	62,382	Salmon River	
		Siuslaw		Siuslaw	12,923				
		Siletz		Siletz	2,944				
Mid-Oregon Coast	Not an Annex stock		Fall	Umpqua				NA	
				Mid South Oregon Coastal Falls				NA	

[1] Interim goal for modeling based on stock recruitment analysis of model data
NA – not available

Appendix D. ISBM indices.

Page

Appendix D.1. ISBM Indices for Canadian fisheries, from both the CWT-based exploitation rate analysis (2001-2005) and the Chinook model (2001-2007) used to establish the AI for each year. Order of the stock groups correspond to Annex 4, Chapter 3, Attachment IV and V of the PST 1999 Revised Annexes. 130

Appendix D.2. ISBM Indices for U.S. fisheries, from both the CWT-based exploitation rate analysis (2001-2005) and the Chinook model (2001-2007) used to establish the AI for each year. Order of the stock groups correspond to Annex 4, Chapter 3, Attachment IV and V of the PST 1999 Revised Annexes 132

Appendix D.1. ISBM Indices for Canadian fisheries, from both the CWT-based exploitation rate analysis (2001-2005) and the Chinook model (2001-2007) used to establish the AI for each year. Order of the stock groups correspond to Annex 4, Chapter 3, Attachment IV and V of the PST 1999 Revised Annexes.

Stock Group	Escapement Indicator Stocks	Canadian ISBM Indices											
		CWT Indices[1]					Model Indices						
		2001	2002	2003	2004	2005	2001 CLB0107	2002 CLB0206	2003 CLB0308	2004 CLB0404	2005 CLB0506	2006 CLB0604	2007 CLB0705
Lower Strait of Georgia	Cowichan	0 260	0 247	0 363[6]	0 284	0 132	0 325	0 541	0 490	0 593	0 381[8]	0 590[8]	0 240[8]
	Nanaimo[3]	0 260	0 247	NA[7]	NA	NA	0 246	0 190	0 498	0 695	0 695		
Fraser Late	Harrison River[3]	0 090	0 105	0 055[9]	0 032	0 058	0 336	0 302	0 352	0 719	0 332	0 294	0 211
North Puget Sound Natural Springs	Nooksack	0 040	0 023	0 046	NA	NA	0 241	0 195	0 251	0 273	0 314	0 993	0 563
	Skagit	NA	NA	NA	NA	NA	NA	NA	0 251	0 273	0 314	0 993	0 563
Upper Strait of Georgia	Khnaklim, Kakweekan, Wakeman, Kingcome, Nimpkish	0 040	0 063	0 006	0 018	0 028	0 314	0 272	0 649	0 971	0 649	0 584	0 146
Fraser Early (spring and summers)	Upper Fraser, Mid Fraser, Thompson	NA	NA	NA	NA	NA	0 210	0 145	0 661	0 718	0 654	0 610	0 159
West Coast Vancouver Island Falls	WCVI (Artlish, Burman, Kaouk, Tahsis, Tashish, Marble)	0 060	0 248	0 496[10]	0 488	0 986	0 244	0 342	0 744	0 927	0 728	1 082	0 133
Puget Sound Natural Summer / Falls	Skagit	NA	NA	NA	NA	NA	0 217	0 172	0 436	0 438	0 465	1 092	0 718
	Stillaguamish	0 145	NA	NA	0 027	0 057	0 469	0 375	0 513	0 567	0 587	1 166	0 821
	Snohomish	NA	NA	NA	NA	NA	0 222	0 176	0 435	0 445	0 457	1 101	0 736
	Lake Washington	NA	NA	NA	NA	NA	0 355	0 275	0 508	0 446	0 497[11]	0 898	0 735
	Green River	0 350	0 323	0 328	0 162	0 085	0 356	0 275	0 508	0 466	0 497[11]	0 914	0 752
North / Central B. C.	Yakoun, Nass, Skeena, Area 8	NA	NA	NA	NA	NA	0 613	0 584	0 689	0 804	0 680	0 626	0 202
Washington Coastal Fall Naturals[4]	Hoko, Grays Harbor, Queets, Hoh, Quillayute	NA	NA	NA	NA	NA	0 354	0 292	0 292	0 435	0 457	0 363	0 194
Columbia River Falls[4]	Upriver Brights	NA	NA	NA	NA	NA	0 377	0 429	0 686	0 663	0 640	0 523	0 129
	Deschutes	NA	NA	NA	NA	NA	0 377	0 429	0 686	0 663	0 640	0 523	0 129
	Lewis[3]	NA	NA	NA	NA	NA	0 180	0 171	0 515	0 480	0 546	0 315	0 030
Columbia R Summers[4]	Mid-Columbia Summers[3]	NA	NA	NA	NA	NA	0 144	0 198	0 352	0 333	0 406	0 335	0 119
Far North Migrating OR Coastal Falls[4]	Nehalem[3], Siletz[3], Siuslaw[3]	NA	NA	NA	NA	NA	0 505	0 514	0 689	0 672	0 674	0 515	0 078

[1] The CWT-based estimates, not the model estimates, are to be used in postseason assessments.
[2] NA means not available because of insufficient data (lack of stock specific tag codes, base period CWT recoveries, etc).
[3] Stock or stock group with an agreed CTC escapement goal.
[4] Stock group not in Annex Attachment IV.
[5] Indices for this stock are calculated from CWT recoveries for Cowichan; differences between Nanaimo and Cowichan stock indices are due to differences in terminal harvest.
[6] An inconsistency was discovered between the approaches used to calculate the model-based and CWT-based indices. The former included harvest rates for terminal sport while the latter did not. Terminal sport harvest rates are now included in the calculation of both indices. Further review is yet required to determine whether the base period terminal sport harvest rates obtained from analyses of Big Qualicum CWT recoveries adequately represent impacts that would have occurred on Cowichan Chinook.
[7] Several problems have been identified in the approach previously used to calculate the CWT-based indices for Nanaimo Chinook; indices for this stock will not be reported as their utility is questionable.
[8] Although model-based indices were previously calculated separately for Cowichan and Nanaimo Chinook, these did not adequately represent impacts on either LGS stock. This is because the model-based data represent an aggregate of the two stocks and methods do not currently exist to correctly disaggregate these data for calculation of the ISBM values. Until such methods are developed, a single index value only will be reported representing the aggregate.
[9] The terminal sport harvest rates for Chilliwack Hatchery Chinook, the indicator stock, were removed from the calculation for the Harrison River naturals this year because sport harvest has been essentially zero on the natural population.
[10] An inconsistency was discovered between the calculation of the model-based and CWT-based indices. The former included harvest rates for terminal sport while the latter did not. Terminal sport harvest rates are now included in the calculation of both indices. A further review of the indices for WCVI Chinook will be done to determine whether they represent impacts on the WCVI wild aggregate.
[11] For the Canadian ISBM fisheries, both Lake Washington and Green are assumed to have the same distribution and thus the same index value.

Appendix D.2. ISBM Indices for U.S. fisheries, from both the CWT-based exploitation rate analysis (2001-2005) and the Chinook model (2001-2007) used to establish the AI for each year. Order of the stock groups correspond to Annex 4, Chapter 3, Attachment IV and V of the PST 1999 Revised Annexes.

Stock Group	Escapement Indicator Stocks	US ISBM Indices											
		CWT Indices[3]					Model Indices						
		2001	2002	2003	2004	2005	2001 CLB0107	2002 CLB0206	2003 CLB0308	2004 CLB0404	2005 CLB0506	2006 CLB0604	2007 CLB0705
Washington Coastal Fall Naturals	Hoko	NA	NA[1]	NA[1]	NA[1]	NA	0 56	0 480	0 682	0 966	0 444	0 442	0 401
	Grays Harbor	0 860	0 540	0 150	0 530	0 560	0 450	0 840	0 494	0 573	0 222	0 544	0 504
	Queets	1 440	0 840	0 850	0 840	2 050	0 440	1 050	1 063	0 932	1 023	1 022	1 014
	Hoh	1 660	0 950	1 340	1 220	1 030	0 760	1 260	1 208	1 214	1 499	1 493	1 111
	Quillayute	1 480	1 420	0 990	1 150	1 030	0 750	1 310	1 292	1 139	1 133	0 673	0 883
Columbia River Falls	Upriver Brights	1 350	1 320	1 430	1 740	1 780	0 990	0 910	1 022	0 906	0 734	0 814	0 726
	Deschutes	0 520	0 590	0 049	0 510	0 670	0 740	0 550	0 561	0 475	0 483	0 437	0 493
	Lewis[5]	0 580	0 560	1 030	0 170	0 980	1 700	0 930	0 851	1 008	1 058	1 861	1 466
Puget Sound Natural Summer / Falls	Skagit	NA	NA	NA	NA	NA	0 780	0 270	0 406	0 157	0 195	0 258	0 325
	Stillaguamish	0 890	NA	NA	0 010	0 220	0 400	0 200	0 184	0 224	0 185	0 493	0 152
	Snohomish	NA	NA	NA	NA	NA	0 600	0 150	0 072	0 110	0 891	0 199	0 138
	Lake Washington	NA	NA	NA	NA	NA	0 590	1 250	0 768	0 411	0 373	0 613	0 391
	Green R	1 180	1 070	1 030	1 010	0 170	0 600	0 350	0 263	0 260	0 202	0 361	0 278
Fraser Late	Harrison River[5]	0 310	0 410	0 640	0 320	0 240	0 620	0 720	0 981	1 058	0 670	0 787	0 563
Columbia R Summers	Mid-Columbia Summers[5]	5 320	7 250	10 040	2 690	6 080	0 140	0 820	0 794	0 715	0 545	0 696	0 943
Far North Migrating OR Coastal Falls	Nehalem[5]	1 940	2 170	3 110	1 800	2 000	2 750	2 610	2 346	2 230	2 090	1 912	2 183
	Siletz[5]	1 190	1 310	1 590	2 290	1 190	1 870	1 330	1 302	1 288	1 233	1 237	1 399
	Siuslaw[5]	2 180	2 560	3 820	1 030	1 630	0 950	3 340	2 856	2 816	2 643	1 095	1 241
North Puget Sound Natural Springs	Nooksack	0 040	NA	NA	NA	NA	0 010	0 000	0 121	0 974	0 222	0 121	NA
	Skagit	NA	1 120	NA	NA	NA	0 070	0 060	0 119	0 663	0 213	0 161	NA
Lower Strait of Georgia[4]	Cowichan,	11 350	5 780	4 990	7 250	10 230	0 480	0 220	0 452	0 915	0 407[9]	0 271	0 288
	Nanaimo	11 350	5 780	4 990	7 250	10 230	0 480	0 220	0 452	0 915	0 915		0 288
Upper Strait of Georgia[4]	Klinaklini, Kakweikan, Wakeman, Kingcome, Nimpkish	NA	NA	NA	NA	NA	NC	NC	NC	NC	NC	NC	NC
Fraser Early (spring and summers)[4]	Upper Fraser, Mid Fraser, Thompson	NA	NA	NA	NA	NA	0 700	0 150	0 277	0 839	0 257	0 224	0 219
West Coast Vancouver Island Falls[4]	WCVI (Artlish, Burman, Kauok, Tahsis, Tashish, Marble)	NA	NA	NA	NA	NA	0 730	0 270	0 658	0 540	0 290	0 128	0 311
North / Central B C	Yakoun, Nass, Skeena, Area 8	NA	NA	NA	NA	NA	NC	NC	NC	NC	NC	NC	NC

[9] See the footnote for the corresponding value in the table of indices for the Canadian ISBM fisheries

Appendix E. Percent distribution of landed catch and total mortality among fisheries and escapement for exploitation rate indicator stocks by calendar year.

These data result from cohort analysis of CWT recoveries for the indicator stocks; data within a row for each calendar year sum to 100%. Some changes are present in these distribution tables compared to those presented in previous reports. There are various reasons for the changes including updates to escapement time series, in the case of some Columbia River stocks. Also, a computational rule used in producing the stock-specific distribution tables determines whether data are reported for any particular calendar year. The rule is that at least three year classes of CWT recoveries (out of four or five) must be available in any calendar year. Lack of CWT releases in recent years for some of the indicators has resulted in no distribution data for 2000-2003. Missing broods are noted in the appropriated tables.

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Appendix E.1. Percent distribution of Alaska Spring Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	NCBC Net	NCBC Sport	WCVI Troll	GeoSt Troll Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1983	25 1%	1 3%	9 4%	1 7%	0 0%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	62 2%
1984	21 7%	2 6%	15 0%	0 9%	0 0%	0 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	59 4%
1985	23 8%	5 7%	13 1%	1 0%	0 0%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	56 3%
1986	22 3%	5 2%	14 9%	0 6%	0 0%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	56 8%
1987	27 1%	2 8%	14 6%	0 4%	0 0%	0 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	54 6%
1988	27 8%	2 0%	16 9%	1 1%	0 0%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	52 0%
1989	21 8%	7 2%	15 0%	0 6%	0 0%	0 3%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	55 0%
1990	30 8%	2 4%	20 3%	1 7%	0 0%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	44 7%
1991	35 8%	2 1%	22 1%	0 6%	0 0%	0 3%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	38 8%
1992	24 2%	2 3%	24 4%	0 4%	0 0%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	48 4%
1993	18 7%	5 9%	20 3%	0 1%	0 0%	0 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	54 6%
1994	13 9%	16 0%	16 1%	0 4%	0 0%	0 4%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	53 0%
1995	24 8%	13 9%	19 9%	0 3%	0 0%	0 3%	0 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	40 5%
1996	23 3%	10 3%	31 5%	0 0%	0 0%	0 3%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	34 4%
1997	23 8%	8 3%	31 2%	0 0%	0 0%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	36 5%
1998	25 1%	10 2%	28 6%	0 0%	0 0%	0 0%	1 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	35 2%
1999	19 2%	5 4%	29 8%	0 0%	0 0%	0 0%	0 6%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	44 9%
2000	21 4%	5 2%	25 6%	0 0%	0 0%	0 1%	0 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	47 3%
2001	15 3%	4 3%	18 6%	0 2%	0 0%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	61 6%
2002	11 1%	3 9%	16 2%	0 7%	0 0%	0 0%	0 7%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	67 2%
2003	15 4%	1 7%	17 5%	0 7%	0 0%	0 0%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	64 5%
2004	15 0%	5 4%	14 4%	0 4%	0 0%	0 0%	0 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	64 4%
2005	22 3%	5 5%	30 4%	0 3%	0 0%	0 0%	0 7%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	40 8%
(83-84)	23 4%	2 0%	12 2%	1 3%	0 0%	0 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	60 8%
(85-98)	24 5%	6 7%	20 6%	0 5%	0 0%	0 3%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	47 2%
(99-05)	17 1%	4 5%	21 8%	0 3%	0 0%	0 0%	0 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	55 8%

Appendix E.2. Percent distribution of Alaska Spring Chinook total fishing mortalities among fisheries and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Trl&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1983	32 0%	1 5%	13 3%	1 8%	0 0%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	51 2%
1984	26 0%	2 6%	19 2%	1 0%	0 0%	0 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 1%	50 9%
1985	27 6%	11 0%	14 5%	0 9%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	45 9%
1986	26 1%	11 1%	15 2%	0 5%	0 0%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	47 0%
1987	35 8%	5 4%	13 6%	0 4%	0 0%	0 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	44 4%
1988	31 7%	5 9%	16 5%	1 2%	0 0%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	44 4%
1989	26 6%	10 7%	15 7%	0 6%	0 0%	0 3%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	46 1%
1990	36 4%	6 6%	19 3%	1 9%	0 0%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	35 6%
1991	38 3%	5 1%	21 4%	0 6%	0 0%	0 3%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	34 0%
1992	26 2%	6 6%	23 9%	0 5%	0 0%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	42 5%
1993	22 3%	9 4%	20 6%	0 2%	0 0%	0 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	47 1%
1994	17 2%	29 5%	14 6%	0 4%	0 0%	0 3%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	37 9%
1995	30 0%	14 8%	19 9%	0 3%	0 0%	0 4%	0 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	34 3%
1996	26 1%	11 5%	31 3%	0 1%	0 0%	0 4%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	30 5%
1997	24 7%	11 1%	31 3%	0 0%	0 0%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	32 7%
1998	24 7%	19 4%	26 9%	0 0%	0 0%	0 0%	1 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	28 0%
1999	21 3%	8 1%	31 6%	0 0%	0 0%	0 0%	0 7%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	38 2%
2000	24 6%	8 0%	26 3%	0 0%	0 0%	0 0%	0 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	40 6%
2001	18 0%	6 6%	19 4%	0 2%	0 0%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	55 7%
2002	13 0%	7 1%	17 8%	0 8%	0 0%	0 1%	0 9%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	60 3%
2003	16 8%	4 8%	18 9%	0 7%	0 0%	0 0%	0 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	58 5%
2004	16 3%	13 6%	15 0%	0 4%	0 0%	0 0%	0 6%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	53 9%
2005	24 7%	12 0%	29 1%	0 4%	0 0%	0 0%	0 8%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	33 0%
(83-84)	29 0%	2 1%	16 3%	1 4%	0 0%	0 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 1%	51 1%
(85-98)	28 1%	11 3%	20 3%	0 5%	0 0%	0 2%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	39 3%
(99-05)	19 2%	8 6%	22 6%	0 4%	0 0%	0 0%	0 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	48 6%

Appendix E.3. Percent distribution of Kitsumkalum River Summer Chinook reported catch among fisheries and escapement (NA=not available).

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1984	50 8%	0 0%	0 0%	18 5%	0 0%	30 8%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	NA [1]
1985	26 1%	0 0%	1 6%	7 1%	0 0%	13 6%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	51 6%
1986	8 9%	0 0%	0 0%	14 1%	0 0%	8 9%	2 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	65 7%
1987	7 4%	0 0%	0 0%	9 1%	0 0%	7 8%	4 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	71 4%
1988	17 4%	0 6%	1 9%	3 1%	0 0%	23 0%	7 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	46 6%
1989	10 9%	0 3%	6 8%	5 0%	0 0%	11 3%	6 8%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	59 1%
1990	10 7%	0 0%	2 8%	6 6%	0 3%	7 1%	7 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	65 0%
1991	14 6%	0 0%	3 7%	8 8%	0 7%	16 7%	13 6%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	41 8%
1992	13 9%	0 0%	1 9%	7 0%	0 0%	9 4%	6 6%	0 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	60 7%
1993	10 4%	0 9%	2 2%	10 0%	0 0%	18 7%	4 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	53 5%
1994	11 1%	0 0%	0 0%	5 6%	0 0%	19 0%	6 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	57 9%
1995	11 8%	0 0%	2 7%	7 0%	0 0%	28 5%	8 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	41 9%
1996	8 3%	0 2%	6 0%	0 0%	0 0%	18 5%	5 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	62 0%
1997	10 2%	0 0%	7 4%	0 0%	0 0%	8 2%	12 7%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	61 5%
1998	8 5%	0 0%	3 0%	0 0%	0 0%	1 2%	6 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	81 0%
1999	13 9%	0 0%	9 2%	0 0%	0 0%	0 9%	11 6%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	64 4%
2000	6 7%	0 0%	6 7%	0 0%	0 0%	9 8%	6 4%	0 0%	0 4%	0 0%	0 0%	0 0%	0 0%	0 0%	70 0%
2001	7 9%	0 0%	5 2%	0 4%	0 0%	6 9%	10 7%	0 0%	0 0%	0 0%	0 0%	0 2%	0 0%	0 0%	68 8%
2002	12 0%	0 2%	5 0%	1 3%	0 0%	2 3%	16 5%	0 0%	0 4%	0 0%	0 0%	0 0%	0 0%	0 0%	62 3%
2003	14 0%	0 0%	1 7%	5 0%	0 0%	0 0%	9 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	70 2%
2004	8 2%	2 6%	5 4%	0 9%	0 0%	0 8%	7 9%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	74 3%
2005	13 3%	0 0%	2 3%	2 3%	0 0%	0 0%	19 8%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	62 3%
(85-98)	12 4%	0 2%	2 8%	6 4%	0 1%	14 7%	6 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	56 8%
(99-05)	26 1%	0 0%	1 6%	7 1%	0 0%	13 6%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	51 6%

1 Values represent estimates of catch distribution only for this year

Appendix E.4. Percent distribution of Kitsumkalum River Summer Chinook total fishing mortalities among fisheries and escapement (NA=not available).

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1984	52 6%	0 0%	0 0%	21 1%	0 0%	26 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	NA [1]
1985	29 6%	0 0%	1 5%	7 7%	0 0%	12 8%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	48 5%
1986	10 2%	0 0%	0 0%	13 9%	0 0%	8 8%	2 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	64 8%
1987	12 8%	0 0%	2 6%	9 8%	0 0%	7 2%	5 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	62 3%
1988	23 4%	2 4%	4 9%	7 3%	0 0%	18 0%	7 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	36 6%
1989	14 3%	0 6%	6 9%	5 3%	0 0%	10 6%	6 8%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	55 5%
1990	11 8%	0 0%	3 3%	7 7%	0 3%	6 8%	7 9%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	62 1%
1991	19 9%	0 0%	4 2%	10 7%	0 9%	14 8%	13 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	36 5%
1992	15 4%	0 0%	2 0%	7 9%	0 0%	9 1%	6 9%	0 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	58 3%
1993	11 6%	1 7%	2 1%	11 6%	0 0%	17 8%	4 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	50 8%
1994	13 3%	0 0%	0 0%	6 7%	0 0%	17 8%	8 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	54 1%
1995	13 2%	0 0%	2 7%	9 5%	0 0%	30 9%	8 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	35 5%
1996	9 9%	0 2%	6 4%	0 4%	0 0%	20 5%	5 7%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	57 0%
1997	11 5%	0 0%	8 5%	0 0%	0 0%	8 5%	14 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	57 2%
1998	10 3%	0 0%	3 5%	0 0%	0 0%	1 4%	7 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	77 8%
1999	14 9%	0 0%	11 3%	0 0%	0 0%	0 9%	14 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	58 3%
2000	8 5%	0 0%	8 8%	0 0%	0 0%	9 8%	8 3%	0 0%	0 3%	0 0%	0 0%	0 0%	0 0%	0 0%	64 3%
2001	8 8%	0 0%	5 3%	0 4%	0 0%	13 4%	11 7%	0 0%	0 0%	0 0%	0 0%	0 2%	0 0%	0 0%	60 1%
2002	12 6%	0 6%	5 5%	1 4%	0 0%	4 7%	19 1%	0 0%	0 6%	0 0%	0 0%	0 0%	0 0%	0 0%	55 6%
2003	15 7%	0 0%	1 9%	5 7%	0 0%	0 0%	10 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	66 5%
2004	8 4%	6 8%	5 8%	0 9%	0 0%	1 3%	9 9%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	66 9%
2005	13 9%	0 0%	2 2%	2 2%	0 0%	0 0%	21 6%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	60 1%
(85-98)	15 1%	0 4%	3 5%	7 6%	0 1%	14 1%	7 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	52 2%
(99-05)	11 8%	1 1%	5 8%	1 5%	0 0%	4 3%	13 6%	0 0%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	61 7%

[1] Values represent estimates of fishing mortality distribution only for this year

Appendix E.5. Percent distribution of Robertson Creek Fall Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Geo/St Trl&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1979	17.9%	0.8%	0.7%	11.5%	10.9%	7.8%	0.3%	8.1%	1.7%	2.3%	5.2%	0.0%	0.1%	0.0%	32.6%
1980	26.9%	7.0%	0.9%	8.1%	8.3%	4.5%	0.1%	7.0%	0.1%	11.2%	3.4%	0.0%	0.2%	0.0%	22.5%
1981	29.7%	1.6%	0.8%	12.2%	8.2%	4.9%	0.5%	5.3%	0.6%	13.5%	5.7%	0.0%	0.4%	0.0%	16.5%
1982	25.0%	3.4%	1.5%	13.5%	7.5%	5.0%	0.1%	5.8%	0.9%	14.8%	6.4%	0.1%	0.6%	0.2%	15.3%
1983	36.0%	3.3%	0.6%	10.4%	8.0%	2.4%	0.3%	5.3%	0.3%	18.2%	4.6%	0.0%	0.2%	0.0%	10.4%
1984	26.6%	4.0%	0.0%	14.7%	3.0%	2.8%	0.0%	6.7%	0.8%	17.7%	16.0%	0.0%	0.2%	0.0%	7.6%
1985	14.1%	5.8%	0.0%	17.7%	0.5%	4.5%	0.0%	2.0%	0.8%	3.6%	17.7%	0.0%	2.0%	0.0%	31.3%
1986	13.9%	4.6%	0.0%	8.1%	1.1%	3.1%	0.7%	4.4%	0.0%	1.5%	26.6%	0.0%	0.0%	1.1%	35.0%
1987	6.5%	1.5%	0.6%	6.1%	2.9%	2.4%	0.5%	2.2%	0.5%	1.1%	20.9%	0.0%	0.3%	0.1%	54.3%
1988	9.9%	2.1%	0.9%	6.6%	1.2%	2.0%	1.1%	4.1%	0.6%	8.1%	18.6%	0.0%	0.3%	0.2%	44.4%
1989	8.0%	1.9%	0.4%	7.8%	0.8%	1.1%	1.0%	1.6%	0.8%	20.6%	18.6%	0.0%	0.1%	0.1%	37.1%
1990	15.8%	1.1%	1.3%	7.3%	2.0%	1.7%	0.9%	6.3%	0.3%	10.4%	10.8%	0.0%	0.0%	0.1%	41.9%
1991	16.9%	0.8%	3.1%	9.2%	2.7%	0.6%	0.8%	4.5%	0.3%	15.0%	13.7%	0.0%	0.0%	0.1%	32.4%
1992	13.7%	3.0%	1.7%	7.2%	3.0%	0.9%	1.5%	18.8%	0.1%	0.8%	8.0%	0.0%	0.1%	0.1%	41.1%
1993	13.9%	1.0%	2.5%	7.1%	2.0%	0.4%	1.4%	13.7%	0.5%	8.4%	15.7%	0.0%	0.0%	0.1%	33.2%
1994	15.8%	2.2%	3.7%	9.5%	1.1%	1.1%	1.1%	5.3%	0.4%	12.8%	21.3%	0.0%	0.0%	0.1%	25.6%
1995	15.1%	0.0%	4.0%	3.0%	0.3%	0.3%	2.0%	1.5%	1.4%	7.2%	12.3%	0.0%	0.2%	0.0%	52.6%
1996	5.6%	0.1%	1.9%	0.0%	0.7%	0.0%	2.8%	0.0%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	87.4%
1997	10.7%	3.2%	3.9%	4.5%	1.8%	0.4%	3.3%	0.1%	0.5%	6.5%	20.0%	0.1%	0.0%	0.0%	44.9%
1998	16.3%	1.2%	5.0%	6.1%	0.0%	0.0%	3.1%	0.0%	0.6%	4.1%	18.9%	0.1%	0.0%	0.0%	44.6%
1999	11.8%	0.4%	7.7%	3.2%	0.2%	0.0%	6.1%	0.0%	0.8%	6.7%	21.6%	0.0%	0.0%	0.0%	41.5%
2000	5.3%	0.0%	0.0%	0.0%	0.0%	0.0%	9.0%	0.0%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	84.1%
2001	3.0%	0.0%	1.7%	0.0%	0.0%	0.0%	0.4%	0.0%	2.2%	0.0%	2.1%	0.0%	0.0%	0.0%	90.5%
2002	10.4%	0.2%	1.4%	2.5%	0.1%	0.0%	3.9%	0.3%	0.6%	7.2%	23.8%	0.0%	0.0%	0.0%	49.4%
2003	13.2%	2.0%	3.2%	0.7%	0.0%	0.0%	3.8%	0.0%	0.2%	3.1%	17.5%	0.0%	0.0%	0.0%	56.3%
2004	11.4%	7.2%	2.5%	2.2%	0.0%	0.0%	4.5%	0.1%	1.3%	12.1%	17.0%	0.0%	0.0%	0.1%	41.7%
2005	13.3%	2.5%	3.5%	2.6%	0.0%	0.0%	8.2%	0.0%	0.7%	31.4%	12.6%	0.0%	0.0%	0.0%	25.3%
(79-84)	27.0%	3.4%	0.8%	11.7%	7.7%	4.6%	0.2%	6.4%	0.7%	13.0%	6.9%	0.0%	0.3%	0.0%	17.5%
(85-98)	12.6%	2.0%	2.1%	7.2%	1.4%	1.3%	1.4%	4.6%	0.6%	7.2%	15.9%	0.0%	0.2%	0.1%	43.3%
(99-05)	9.8%	1.8%	2.9%	1.6%	0.0%	0.0%	5.1%	0.1%	1.1%	8.6%	13.5%	0.0%	0.0%	0.0%	55.5%

Appendix E.6. Percent distribution of Robertson Creek Fall Chinook total fishing mortalities among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	NCBC Net	NCBC Sport	WCVI Troll	Gnalt Troll/Jig	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1979	20.7%	0.7%	0.7%	12.8%	12.0%	7.1%	0.3%	9.0%	1.6%	2.0%	4.8%	0.0%	0.1%	0.0%	28.1%
1980	27.7%	6.9%	1.0%	8.6%	8.7%	4.4%	0.1%	7.5%	0.1%	10.6%	3.4%	0.0%	0.2%	0.0%	20.6%
1981	32.9%	1.5%	1.0%	13.1%	8.9%	4.4%	0.5%	5.8%	0.6%	11.9%	5.2%	0.0%	0.5%	0.0%	13.7%
1982	28.5%	3.1%	1.6%	14.2%	7.8%	4.6%	0.1%	6.1%	0.6%	13.2%	5.9%	0.1%	0.6%	0.2%	13.0%
1983	40.6%	3.0%	0.6%	10.1%	7.7%	2.2%	0.3%	5.1%	0.3%	16.5%	4.4%	0.0%	0.2%	0.0%	9.1%
1984	28.0%	3.8%	0.0%	14.8%	3.0%	2.7%	0.0%	6.9%	0.8%	16.8%	15.9%	0.0%	0.2%	0.0%	7.1%
1985	14.9%	16.8%	0.0%	16.0%	0.4%	3.7%	0.0%	1.6%	0.7%	3.0%	15.4%	0.0%	1.9%	0.0%	25.4%
1986	17.8%	12.6%	0.0%	8.6%	1.2%	2.9%	1.1%	4.4%	0.0%	1.2%	22.1%	0.0%	0.0%	1.8%	28.2%
1987	10.2%	3.4%	1.1%	7.5%	3.5%	2.3%	0.6%	2.7%	0.5%	1.0%	19.6%	0.0%	0.3%	0.1%	47.1%
1988	11.0%	4.8%	1.2%	7.3%	1.3%	1.9%	1.1%	4.7%	0.7%	7.5%	18.3%	0.0%	0.4%	0.2%	39.7%
1989	11.2%	5.7%	0.6%	9.1%	1.0%	1.1%	1.0%	1.9%	0.8%	18.5%	17.5%	0.0%	0.1%	0.1%	31.4%
1990	19.5%	2.9%	1.5%	8.8%	2.3%	1.6%	0.9%	6.7%	0.3%	9.4%	10.0%	0.0%	0.0%	0.1%	35.9%
1991	20.1%	1.8%	3.3%	9.9%	2.9%	0.6%	0.8%	4.9%	0.3%	13.7%	13.1%	0.0%	0.0%	0.1%	28.7%
1992	16.8%	8.1%	1.7%	7.5%	3.0%	0.8%	1.4%	10.6%	0.1%	0.6%	7.2%	0.0%	0.1%	0.1%	34.1%
1993	16.0%	2.3%	2.5%	7.6%	2.1%	0.4%	1.4%	14.4%	0.5%	7.7%	15.1%	0.0%	0.0%	0.1%	29.9%
1994	18.1%	4.9%	3.6%	9.2%	1.0%	1.0%	1.1%	5.2%	0.4%	11.7%	20.6%	0.0%	0.0%	0.1%	23.1%
1995	17.2%	0.0%	4.5%	3.6%	0.4%	0.5%	2.6%	1.8%	1.5%	6.7%	13.1%	0.0%	0.2%	0.0%	47.9%
1996	9.2%	0.1%	4.5%	2.7%	0.7%	0.0%	6.1%	0.7%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	74.2%
1997	13.7%	8.2%	4.4%	5.0%	2.0%	0.4%	3.6%	0.2%	0.6%	5.9%	18.0%	0.1%	0.0%	0.0%	37.9%
1998	16.8%	3.0%	5.0%	6.1%	0.0%	0.0%	3.6%	0.0%	0.6%	3.9%	19.0%	0.1%	0.0%	0.0%	41.8%
1999	12.4%	0.8%	7.8%	3.2%	0.2%	0.0%	6.8%	0.0%	0.8%	6.5%	22.2%	0.0%	0.0%	0.0%	39.3%
2000	5.9%	0.0%	0.0%	0.0%	0.0%	0.0%	16.5%	0.0%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	75.7%
2001	4.5%	0.0%	3.1%	0.0%	0.0%	0.0%	0.7%	0.0%	2.8%	0.0%	2.8%	0.0%	0.0%	0.0%	86.4%
2002	12.0%	0.6%	1.7%	2.8%	0.2%	0.0%	4.9%	0.2%	0.7%	6.7%	24.9%	0.0%	0.0%	0.0%	46.0%
2003	14.3%	5.6%	3.7%	0.8%	0.0%	0.0%	4.9%	0.0%	0.3%	2.8%	18.0%	0.0%	0.0%	0.0%	49.6%
2004	11.2%	19.6%	2.4%	2.2%	0.0%	0.0%	5.1%	0.1%	1.3%	9.8%	15.6%	0.0%	0.0%	0.0%	32.7%
2005	13.9%	4.4%	3.6%	2.7%	0.0%	0.0%	9.8%	0.0%	0.7%	29.1%	12.8%	0.0%	0.0%	0.0%	23.0%
(79-84)	29.7%	3.2%	0.6%	12.3%	8.0%	4.2%	0.2%	6.7%	0.7%	11.8%	8.6%	0.0%	0.3%	0.0%	15.3%
(85-98)	15.2%	5.3%	2.4%	7.8%	1.6%	1.2%	1.8%	4.9%	0.6%	6.5%	14.9%	0.0%	0.2%	0.2%	37.4%
(99-05)	10.6%	4.4%	3.2%	1.7%	0.1%	0.0%	7.0%	0.1%	1.2%	7.8%	13.7%	0.0%	0.0%	0.0%	50.2%

Appendix E.7. Percent distribution of Quinsam River Fall Chinook reported catch among fisheries and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Trl&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1979	4 7%	5 0%	0 7%	5 3%	10 0%	18 8%	3 0%	0 0%	6 8%	4 2%	0 0%	0 0%	0 0%	0 0%	41 4%
1980	14 6%	5 0%	2 9%	10 4%	16 3%	12 8%	5 2%	0 0%	6 6%	8 7%	0 0%	0 0%	0 0%	0 0%	17 5%
1981	10 9%	2 4%	1 6%	13 2%	12 3%	10 4%	6 5%	0 6%	12 0%	6 5%	0 0%	0 0%	0 0%	0 0%	23 6%
1982	16 3%	7 1%	5 0%	7 5%	6 4%	19 3%	2 2%	0 4%	3 9%	7 5%	0 0%	0 0%	0 0%	0 0%	24 4%
1983	21 0%	1 6%	0 3%	14 7%	11 5%	17 0%	2 8%	0 7%	4 7%	8 4%	0 0%	0 0%	0 0%	0 0%	17 4%
1984	14 3%	5 9%	4 6%	5 8%	5 0%	14 9%	4 0%	0 8%	7 8%	6 5%	0 0%	0 0%	0 0%	0 0%	30 5%
1985	25 7%	5 7%	4 3%	5 1%	3 6%	10 9%	1 0%	0 1%	4 4%	8 3%	0 0%	0 0%	0 0%	0 0%	30 9%
1986	13 8%	4 3%	2 8%	6 6%	7 2%	19 8%	2 9%	0 0%	6 2%	6 4%	0 0%	0 0%	0 0%	0 0%	30 0%
1987	10 7%	3 6%	2 8%	6 3%	6 1%	17 1%	6 5%	0 4%	4 0%	7 3%	0 4%	0 0%	0 0%	0 0%	34 8%
1988	18 6%	1 8%	1 2%	6 5%	2 4%	5 4%	2 8%	0 7%	3 7%	4 0%	0 9%	0 0%	0 0%	0 1%	51 7%
1989	12 7%	1 8%	2 8%	3 9%	1 9%	5 0%	3 3%	0 3%	7 4%	13 1%	0 0%	0 0%	0 1%	0 0%	47 6%
1990	16 0%	2 0%	0 5%	6 2%	4 6%	10 3%	8 3%	1 3%	3 4%	4 4%	0 0%	0 0%	0 0%	0 0%	43 0%
1991	10 6%	1 7%	1 4%	5 9%	9 4%	10 6%	12 5%	0 5%	4 6%	3 7%	0 8%	0 0%	0 0%	0 0%	38 3%
1992	12 0%	0 5%	2 5%	10 5%	9 7%	7 7%	6 5%	0 3%	3 7%	2 7%	0 0%	0 0%	0 0%	0 0%	43 9%
1993	7 8%	3 3%	1 2%	5 7%	5 7%	19 2%	8 7%	1 2%	10 5%	3 3%	0 0%	0 0%	0 0%	0 0%	33 5%
1994	5 3%	6 0%	4 0%	9 3%	1 3%	13 9%	5 0%	0 0%	6 0%	4 0%	0 0%	0 0%	0 0%	0 0%	45 4%
1995	7 0%	4 5%	0 0%	9 1%	0 0%	14 5%	9 5%	0 0%	6 6%	0 8%	0 0%	0 0%	0 0%	0 0%	47 9%
1996	6 4%	0 4%	0 0%	0 0%	0 0%	17 4%	4 5%	0 0%	6 0%	0 4%	0 0%	0 0%	0 0%	0 0%	64 9%
1997	9 0%	3 2%	2 5%	4 1%	3 4%	2 3%	9 0%	0 7%	8 7%	0 2%	5 1%	0 0%	0 0%	0 0%	51 7%
1998	13 8%	2 2%	2 0%	0 0%	0 0%	0 4%	9 1%	0 0%	5 4%	0 0%	0 0%	0 0%	0 4%	0 0%	66 8%
1999	8 6%	3 4%	4 2%	1 3%	0 2%	1 4%	11 9%	0 0%	1 6%	0 0%	0 0%	0 0%	0 0%	0 0%	67 3%
2000	12 8%	2 2%	4 9%	0 3%	0 0%	0 0%	5 6%	0 0%	2 8%	0 5%	0 0%	0 0%	0 0%	0 0%	71 0%
2001	9 6%	1 4%	1 8%	0 1%	0 0%	0 0%	5 4%	0 0%	1 7%	0 1%	0 0%	0 0%	0 0%	0 0%	80 0%
2002	13 7%	2 9%	0 8%	0 4%	0 1%	0 0%	17 7%	0 0%	2 2%	0 0%	0 0%	0 0%	0 0%	0 0%	62 1%
2003	18 6%	1 8%	0 9%	0 0%	0 0%	0 0%	15 8%	0 0%	0 4%	0 0%	0 0%	0 0%	0 0%	0 0%	62 6%
2004	8 4%	14 0%	1 7%	0 3%	0 0%	1 0%	15 8%	0 0%	0 7%	0 0%	0 0%	0 0%	0 0%	0 0%	58 2%
2005	17 0%	2 8%	2 8%	0 3%	0 0%	1 0%	14 8%	0 0%	1 3%	0 0%	0 0%	0 0%	0 0%	0 0%	60 0%
(79-84)	13 6%	4 5%	2 5%	9 5%	10 3%	15 5%	4 0%	0 4%	7 0%	7 0%	0 0%	0 0%	0 0%	0 0%	25 8%
(85-98)	12 1%	2 9%	2 0%	5 7%	4 0%	11 0%	6 4%	0 4%	5 8%	4 2%	0 5%	0 0%	0 0%	0 0%	45 0%
(99-05)	12 7%	4 1%	2 4%	0 4%	0 0%	0 5%	12 4%	0 0%	1 5%	0 1%	0 0%	0 0%	0 0%	0 0%	65 9%

Appendix E.8. Percent distribution of Quinsam River Fall Chinook total fishing mortalities among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Trol/Sp	Other Fisheries Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1979	6.3%	4.9%	1.0%	6.6%	11.6%	18.2%	3.0%	0.1%	6.5%	4.3%	0.0%	0.0%	0.0%	0.0%	37.6%
1980	15.2%	4.6%	3.2%	10.9%	17.3%	12.7%	5.1%	0.0%	6.5%	8.4%	0.0%	0.0%	0.0%	0.0%	15.9%
1981	11.6%	2.3%	1.8%	14.3%	12.9%	10.2%	6.6%	0.6%	11.8%	6.2%	0.0%	0.0%	0.0%	0.0%	21.7%
1982	20.0%	7.0%	5.4%	7.6%	6.7%	18.7%	2.2%	0.4%	3.6%	7.0%	0.0%	0.0%	0.0%	0.0%	21.3%
1983	25.1%	1.4%	0.3%	14.7%	11.5%	16.4%	2.9%	0.7%	4.4%	7.7%	0.0%	0.0%	0.0%	0.0%	15.0%
1984	15.6%	5.9%	5.4%	6.1%	5.1%	14.7%	4.1%	0.9%	7.7%	6.2%	0.0%	0.0%	0.0%	0.0%	28.3%
1985	27.2%	12.7%	4.2%	4.7%	3.3%	9.9%	1.0%	0.1%	3.9%	7.2%	0.0%	0.0%	0.0%	0.0%	25.9%
1986	15.4%	10.8%	3.1%	6.6%	7.2%	18.4%	3.0%	0.0%	5.5%	5.8%	0.0%	0.0%	0.0%	0.0%	24.2%
1987	15.9%	10.4%	2.7%	6.8%	6.7%	14.3%	5.6%	0.4%	3.4%	6.0%	0.3%	0.0%	0.0%	0.0%	27.5%
1988	19.7%	4.4%	1.3%	6.9%	2.5%	5.4%	3.0%	0.8%	3.9%	3.9%	0.9%	0.0%	0.0%	0.2%	47.1%
1989	14.6%	5.3%	2.9%	4.2%	2.0%	4.7%	3.3%	0.3%	7.8%	12.2%	0.0%	0.0%	0.1%	0.0%	42.6%
1990	17.5%	5.1%	0.5%	6.8%	5.0%	9.8%	8.3%	1.4%	3.5%	4.1%	0.0%	0.0%	0.0%	0.0%	37.9%
1991	12.0%	5.0%	1.5%	6.3%	10.0%	9.7%	12.0%	0.6%	4.8%	3.4%	0.7%	0.0%	0.0%	0.0%	34.0%
1992	16.3%	1.2%	2.6%	11.1%	9.9%	7.4%	6.8%	0.3%	3.8%	2.5%	0.0%	0.0%	0.0%	0.0%	38.3%
1993	8.7%	7.2%	1.3%	6.4%	6.4%	17.8%	8.4%	1.3%	11.3%	2.8%	0.0%	0.0%	0.0%	0.0%	28.6%
1994	6.8%	12.7%	4.0%	9.6%	1.4%	12.4%	4.8%	0.0%	6.2%	3.4%	0.0%	0.0%	0.0%	0.0%	38.7%
1995	8.4%	5.1%	0.0%	11.1%	0.0%	16.6%	11.1%	0.0%	6.4%	2.0%	0.0%	0.0%	0.0%	0.0%	39.2%
1996	6.9%	0.7%	0.0%	1.3%	0.0%	19.8%	7.6%	0.0%	6.6%	0.3%	0.0%	0.0%	0.0%	0.0%	56.8%
1997	9.8%	5.9%	3.0%	4.3%	3.5%	2.4%	10.8%	0.8%	9.1%	1.4%	4.7%	0.0%	0.0%	0.0%	44.3%
1998	14.6%	6.3%	2.2%	0.0%	0.0%	0.3%	11.8%	0.0%	5.8%	0.2%	0.0%	0.0%	0.5%	0.0%	58.5%
1999	9.9%	7.2%	5.2%	1.4%	0.2%	1.7%	13.8%	0.0%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	59.0%
2000	14.3%	3.7%	5.5%	0.2%	0.0%	0.0%	7.1%	0.0%	3.1%	1.6%	0.0%	0.0%	0.0%	0.0%	64.5%
2001	10.7%	2.8%	2.0%	0.1%	0.0%	0.0%	6.7%	0.0%	1.8%	0.6%	0.0%	0.0%	0.0%	0.0%	75.3%
2002	13.8%	6.4%	0.8%	0.4%	0.1%	0.0%	21.2%	0.0%	2.5%	0.0%	0.0%	0.0%	0.0%	0.0%	54.9%
2003	20.2%	5.9%	0.9%	0.0%	0.0%	0.0%	19.5%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	53.1%
2004	6.9%	33.2%	1.5%	0.2%	0.0%	1.2%	16.7%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	39.5%
2005	17.6%	4.4%	3.3%	0.4%	0.0%	1.1%	19.2%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	52.6%
(79-84)	15.6%	4.4%	2.9%	10.1%	10.9%	15.2%	4.0%	0.5%	6.8%	6.6%	0.0%	0.0%	0.0%	0.0%	23.3%
(85-98)	13.8%	6.6%	2.1%	6.2%	4.1%	10.6%	7.0%	0.4%	5.9%	3.9%	0.5%	0.0%	0.0%	0.0%	38.8%
(99-05)	13.3%	9.1%	2.7%	0.4%	0.0%	0.6%	14.9%	0.0%	1.7%	0.3%	0.0%	0.0%	0.0%	0.0%	57.0%

Appendix E.9. Percent distribution of Puntledge River Summer Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Other Fisheries Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1979	1 6%	0 3%	0 2%	2 5%	8 0%	6 4%	0 3%	0 9%	37 0%	6 2%	0 0%	0 0%	0 0%	0 0%	36 8%
1980	2 4%	0 0%	0 4%	2 0%	5 9%	4 4%	1 3%	4 9%	38 6%	5 9%	0 0%	0 0%	0 0%	0 0%	34 1%
1981	0 8%	0 0%	0 0%	5 3%	7 3%	3 5%	3 9%	0 0%	59 0%	5 3%	0 0%	0 0%	0 0%	0 0%	14 9%
1982	0 8%	0 4%	0 0%	2 6%	14 6%	6 2%	1 2%	1 8%	22 0%	16 8%	0 0%	0 0%	0 0%	0 0%	33 7%
1983	1 0%	0 2%	0 0%	7 8%	16 2%	5 3%	3 1%	2 5%	26 0%	2 7%	0 0%	0 0%	0 0%	0 0%	35 2%
1984	0 0%	1 0%	0 0%	2 0%	5 0%	3 3%	1 0%	2 0%	23 0%	2 3%	0 0%	0 0%	0 0%	0 0%	60 3%
1985	10 5%	0 8%	2 3%	6 0%	1 5%	8 3%	6 0%	0 0%	32 3%	6 0%	0 0%	0 0%	0 0%	0 0%	26 3%
1986	5 6%	0 0%	4 4%	2 8%	3 9%	10 0%	0 0%	2 8%	42 8%	1 7%	0 0%	0 0%	0 0%	0 0%	26 1%
1987	2 7%	0 7%	0 0%	12 2%	2 0%	6 8%	10 1%	0 0%	16 9%	0 0%	4 7%	0 0%	0 0%	0 0%	43 9%
1988	12 0%	0 0%	0 0%	0 0%	0 0%	4 3%	14 1%	0 0%	17 4%	1 1%	0 0%	0 0%	0 0%	0 0%	51 1%
1989	3 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	48 4%	0 0%	0 0%	0 0%	0 0%	0 0%	48 4%
1990	8 3%	0 0%	0 0%	0 0%	3 1%	10 4%	4 2%	0 0%	8 3%	4 2%	0 0%	0 0%	0 0%	0 0%	61 5%
1991	6 5%	2 2%	0 0%	0 0%	0 0%	5 4%	9 7%	0 0%	28 0%	6 5%	0 0%	0 0%	0 0%	0 0%	41 9%
1992	0 0%	0 0%	0 0%	0 0%	0 0%	6 9%	3 4%	0 0%	36 8%	14 9%	0 0%	0 0%	0 0%	0 0%	37 9%
1993	0 0%	0 0%	0 0%	0 0%	0 0%	7 1%	11 4%	0 0%	48 6%	0 0%	0 0%	0 0%	0 0%	0 0%	32 9%
1994	7 1%	0 0%	0 0%	0 0%	0 0%	7 1%	0 0%	0 0%	53 6%	3 6%	0 0%	0 0%	0 0%	0 0%	28 6%
1995	5 6%	2 8%	0 0%	0 0%	0 0%	13 9%	0 0%	0 0%	30 6%	0 0%	0 0%	0 0%	0 0%	0 0%	47 2%
1996	0 0%	0 0%	0 0%	0 0%	0 0%	2 2%	6 7%	0 0%	28 9%	0 0%	0 0%	0 0%	0 0%	0 0%	62 2%
1997	0 0%	0 0%	0 0%	0 0%	0 0%	8 6%	11 4%	0 0%	5 7%	0 0%	0 0%	0 0%	0 0%	0 0%	74 3%
1998	4 8%	4 8%	0 0%	0 0%	0 0%	0 0%	23 8%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	66 7%
1999	13 9%	0 0%	0 0%	0 0%	0 0%	2 8%	0 0%	0 0%	6 5%	0 0%	0 0%	0 0%	0 0%	0 0%	76 9%
2000	0 0%	1 6%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	9 5%	0 0%	0 0%	0 0%	0 0%	0 0%	88 9%
2001	2 7%	0 9%	0 0%	0 0%	0 0%	0 0%	3 7%	2 3%	2 7%	0 0%	0 0%	0 0%	0 0%	0 0%	87 7%
2002	4 5%	0 0%	0 0%	0 0%	0 0%	0 0%	8 9%	0 0%	3 6%	0 0%	9 8%	0 0%	0 0%	0 0%	73 2%
2003	0 0%	0 0%	0 0%	0 0%	0 0%	0 9%	13 3%	0 0%	4 4%	0 0%	0 0%	0 0%	0 0%	0 0%	81 4%
2004	14 3%	1 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 1%	8 2%	0 0%	0 0%	0 0%	0 0%	0 0%	73 5%
2005	1 7%	0 0%	0 0%	1 3%	0 0%	0 0%	7 4%	0 7%	11 1%	0 0%	0 0%	0 0%	0 0%	0 0%	77 8%
(79-84)	1 1%	0 3%	0 1%	3 7%	9 5%	4 9%	1 8%	2 0%	34 3%	6 5%	0 0%	0 0%	0 0%	0 0%	35 8%
(85-98)	4 7%	0 8%	0 5%	1 5%	0 8%	6 5%	7 2%	0 2%	28 5%	2 7%	0 3%	0 0%	0 0%	0 0%	46 4%
(99-05)	5 3%	0 5%	0 0%	0 2%	0 0%	0 5%	4 8%	0 9%	6 6%	0 0%	1 4%	0 0%	0 0%	0 0%	79 9%

Appendix E.10. Percent distribution of Puntledge River Summer Chinook total fishing mortalities among fisheries and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1979	19%	0 3%	0 3%	2 8%	9 0%	6 3%	0 3%	1 3%	36 9%	6 2%	0 0%	0 0%	0 0%	0 0%	1 9%
1980	28%	0 0%	0 5%	2 4%	6 7%	4 6%	1 4%	5 7%	38 5%	5 9%	0 0%	0 0%	0 0%	0 0%	2 8%
1981	09%	0 0%	0 0%	6 5%	8 5%	3 2%	4 0%	0 0%	58 1%	5 2%	0 0%	0 0%	0 0%	0 0%	0 9%
1982	11%	0 5%	0 0%	2 9%	16 7%	6 5%	1 4%	2 2%	21 7%	16 8%	0 0%	0 0%	0 0%	0 0%	1 1%
1983	21%	0 2%	0 0%	8 3%	17 3%	5 3%	3 2%	2 6%	26 0%	2 6%	0 0%	0 0%	0 0%	0 0%	2 1%
1984	00%	1 0%	0 0%	2 2%	5 7%	3 5%	1 3%	2 2%	23 9%	2 5%	0 0%	0 0%	0 0%	0 0%	0 0%
1985	147%	1 3%	3 8%	6 4%	1 3%	8 3%	6 4%	0 0%	30 1%	5 1%	0 0%	0 0%	0 0%	0 0%	14 7%
1986	60%	0 0%	5 5%	3 0%	4 5%	10 0%	0 0%	3 0%	43 3%	1 5%	0 0%	0 0%	0 0%	0 0%	6 0%
1987	31%	1 2%	0 0%	15 3%	3 1%	6 1%	10 4%	0 0%	16 6%	0 0%	4 3%	0 0%	0 0%	0 0%	3 1%
1988	119%	0 0%	0 0%	0 0%	0 0%	5 0%	15 8%	0 0%	19 8%	1 0%	0 0%	0 0%	0 0%	0 0%	11 9%
1989	28%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	54 9%	0 0%	0 0%	0 0%	0 0%	0 0%	2 8%
1990	98%	0 0%	0 0%	0 0%	3 9%	10 8%	3 9%	0 0%	8 8%	4 9%	0 0%	0 0%	0 0%	0 0%	9 8%
1991	71%	5 3%	0 0%	0 0%	0 0%	5 3%	10 6%	0 0%	31 0%	6 2%	0 0%	0 0%	0 0%	0 0%	7 1%
1992	00%	0 0%	0 0%	0 0%	0 0%	7 1%	3 1%	0 0%	42 9%	13 3%	0 0%	0 0%	0 0%	0 0%	0 0%
1993	00%	0 0%	0 0%	0 0%	0 0%	6 3%	11 4%	0 0%	53 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
1994	94%	0 0%	0 0%	0 0%	0 0%	6 3%	0 0%	0 0%	56 3%	3 1%	0 0%	0 0%	0 0%	0 0%	9 4%
1995	49%	2 4%	0 0%	0 0%	0 0%	14 6%	0 0%	0 0%	34 1%	2 4%	0 0%	0 0%	0 0%	0 0%	4 9%
1996	00%	0 0%	0 0%	0 0%	0 0%	2 0%	8 0%	0 0%	34 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
1997	00%	0 0%	0 0%	0 0%	0 0%	10 0%	17 5%	0 0%	5 0%	2 5%	0 0%	0 0%	0 0%	0 0%	0 0%
1998	38%	11 5%	0 0%	0 0%	0 0%	0 0%	30 8%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 8%
1999	150%	0 0%	0 0%	0 0%	0 0%	3 5%	0 0%	0 0%	8 0%	0 0%	0 0%	0 0%	0 0%	0 0%	15 0%
2000	00%	3 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	12 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
2001	31%	1 8%	0 0%	0 0%	0 0%	0 0%	4 9%	2 2%	3 1%	0 0%	0 0%	0 0%	0 0%	0 0%	3 1%
2002	56%	0 0%	0 0%	0 0%	0 0%	0 0%	12 1%	0 0%	4 8%	0 0%	11 3%	0 0%	0 0%	0 0%	5 6%
2003	00%	0 0%	0 0%	0 0%	0 0%	0 8%	17 4%	0 0%	5 8%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
2004	168%	1 9%	0 0%	0 0%	0 0%	0 0%	0 0%	2 8%	11 2%	0 0%	0 0%	0 0%	0 0%	0 0%	16 8%
2005	19%	0 0%	0 0%	1 5%	0 0%	0 0%	10 5%	0 6%	13 9%	0 0%	0 0%	0 0%	0 0%	0 0%	1 9%
(79-84)	15%	0 3%	0 1%	4 2%	10 7%	4 9%	1 9%	2 3%	34 2%	6 5%	0 0%	0 0%	0 0%	0 0%	1 5%
(85-98)	53%	1 6%	0 7%	1 8%	0 9%	6 6%	8 4%	0 2%	30 7%	2 9%	0 3%	0 0%	0 0%	0 0%	5 3%
(99-05)	61%	1 0%	0 0%	0 2%	0 0%	0 6%	6 4%	0 8%	8 4%	0 0%	1 6%	0 0%	0 0%	0 0%	6 1%

Appendix E.11. Percent distribution of Big Qualicum River Fall Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Other Fisheries					Escapement
										Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	
1979	3 4%	0 9%	0 3%	1 7%	9 4%	4 1%	0 4%	2 2%	39 3%	8 0%	0 1%	0 0%	0 3%	0 1%	29 8%
1980	1 4%	1 6%	0 4%	4 3%	6 6%	3 4%	1 3%	4 2%	39 2%	9 4%	0 0%	0 1%	0 3%	0 2%	27 6%
1981	1 9%	0 3%	0 4%	1 3%	11 5%	4 5%	0 8%	1 6%	54 7%	9 7%	0 3%	0 0%	0 1%	0 6%	12 3%
1982	4 5%	0 4%	1 2%	4 5%	5 8%	8 5%	0 4%	4 3%	25 6%	12 1%	0 0%	0 0%	1 1%	0 7%	30 9%
1983	5 4%	0 3%	0 3%	4 9%	6 8%	4 6%	1 0%	1 1%	36 6%	14 6%	0 0%	0 0%	0 0%	0 6%	23 7%
1984	1 4%	0 4%	0 0%	1 4%	6 6%	3 6%	5 8%	1 4%	52 3%	6 2%	0 0%	0 0%	0 0%	0 0%	20 7%
1985	3 9%	0 3%	0 0%	1 7%	3 8%	6 8%	1 7%	1 4%	35 8%	12 5%	0 0%	0 0%	2 6%	0 0%	29 4%
1986	1 9%	0 2%	0 0%	0 7%	12 6%	8 1%	2 8%	1 4%	44 6%	7 4%	0 0%	0 0%	0 0%	0 0%	20 1%
1987	8 7%	0 0%	0 9%	3 9%	2 4%	2 6%	2 7%	4 2%	31 4%	5 1%	0 0%	0 8%	0 7%	0 0%	36 5%
1988	2 8%	0 5%	0 0%	2 3%	1 3%	10 2%	1 3%	2 8%	31 8%	4 8%	2 0%	0 0%	1 0%	0 0%	39 2%
1989	4 2%	1 2%	0 6%	3 2%	0 6%	1 0%	1 8%	4 8%	39 3%	8 2%	0 0%	0 2%	0 0%	1 0%	33 9%
1990	4 7%	1 9%	0 0%	6 0%	1 6%	6 6%	2 4%	3 0%	22 6%	11 2%	0 0%	0 2%	0 0%	1 9%	37 8%
1991	2 4%	0 2%	0 0%	2 1%	1 1%	2 9%	1 9%	1 9%	44 9%	5 7%	0 0%	0 5%	0 5%	0 0%	35 8%
1992	2 3%	0 0%	2 5%	5 4%	5 9%	1 6%	7 7%	3 4%	41 2%	3 9%	0 0%	0 0%	0 4%	0 0%	25 6%
1993	1 2%	1 2%	0 0%	1 5%	3 9%	2 9%	3 2%	1 7%	45 0%	6 8%	0 0%	0 0%	0 0%	1 0%	31 5%
1994	4 4%	0 0%	0 0%	1 6%	1 6%	3 6%	2 0%	2 8%	33 7%	2 4%	0 0%	0 0%	2 8%	0 0%	45 2%
1995	7 0%	0 0%	0 0%	1 5%	0 0%	7 0%	2 5%	0 0%	20 9%	0 5%	0 0%	0 0%	0 0%	0 0%	60 7%
1996	2 9%	0 0%	0 0%	0 0%	0 0%	0 7%	1 1%	0 0%	46 4%	0 0%	0 0%	0 0%	0 0%	1 1%	47 9%
1997	3 0%	0 0%	0 0%	5 0%	1 5%	1 5%	2 0%	0 0%	30 3%	0 5%	4 5%	0 0%	0 0%	0 0%	51 7%
1998	7 0%	0 5%	0 0%	0 0%	0 0%	0 0%	5 9%	0 0%	19 5%	0 0%	0 0%	0 0%	0 0%	0 0%	67 0%
1999	5 5%	2 4%	0 0%	2 0%	2 4%	0 0%	3 5%	0 0%	11 4%	0 0%	3 5%	0 0%	0 8%	0 0%	68 6%
2000	13 8%	0 9%	0 0%	0 0%	0 0%	0 4%	3 6%	0 0%	11 1%	0 0%	0 0%	0 0%	3 1%	0 0%	67 1%
2001	4 1%	6 8%	0 0%	0 0%	0 0%	0 0%	10 7%	0 6%	10 5%	0 0%	0 0%	0 0%	1 7%	0 0%	65 6%
2002	9 6%	0 0%	2 9%	2 5%	0 0%	0 0%	11 8%	2 2%	8 9%	0 3%	2 9%	0 0%	1 9%	1 0%	58 1%
2003	8 0%	0 4%	1 7%	0 0%	0 0%	0 0%	9 7%	3 4%	8 8%	0 0%	0 0%	0 0%	0 0%	0 0%	68 1%
2004	7 0%	0 0%	0 3%	4 0%	0 0%	0 0%	4 8%	1 1%	8 3%	0 0%	0 0%	0 5%	1 3%	0 0%	72 7%
2005	9 0%	0 4%	0 0%	2 0%	0 0%	0 8%	9 2%	5 0%	7 2%	0 0%	2 8%	0 6%	3 0%	0 6%	59 2%
(79-84)	3 0%	0 7%	0 4%	3 0%	7 8%	4 8%	1 6%	2 5%	41 3%	10 0%	0 1%	0 0%	0 3%	0 4%	24 2%
(85-98)	4 0%	0 4%	0 3%	2 5%	2 6%	4 0%	2 8%	2 0%	34 8%	4 9%	0 5%	0 1%	0 6%	0 4%	40 2%
(99-05)	8 1%	1 6%	0 7%	1 5%	0 3%	0 2%	7 6%	1 8%	9 5%	0 0%	1 3%	0 2%	1 7%	0 2%	65 3%

Appendix E.12. Percent distribution of Big Qualicum Fall Chinook total fishing mortalities among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Geo$t Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1979	4 3%	0 9%	0 4%	2 2%	11 7%	4 0%	0 4%	2 8%	38 0%	7 6%	0 1%	0 0%	0 3%	0 1%	27 1%
1980	1 5%	1 7%	0 4%	4 9%	7 5%	3 4%	1 3%	4 9%	38 7%	9 3%	0 0%	0 2%	0 3%	0 2%	25 5%
1981	2 4%	0 3%	0 4%	1 6%	13 4%	4 5%	0 8%	1 9%	53 1%	9 4%	0 3%	0 0%	0 2%	0 6%	11 1%
1982	5 7%	0 5%	1 4%	4 9%	6 4%	8 4%	0 4%	4 9%	25 1%	11 8%	0 0%	0 0%	1 1%	0 8%	28 6%
1983	5 5%	0 3%	0 7%	5 0%	7 2%	4 8%	1 2%	1 2%	37 6%	14 1%	0 0%	0 0%	0 0%	1 0%	21 5%
1984	2 4%	0 4%	0 0%	1 6%	7 2%	3 6%	6 5%	1 6%	51 9%	6 1%	0 0%	0 0%	0 0%	0 0%	18 6%
1985	6 8%	1 1%	0 0%	2 1%	4 4%	6 6%	2 1%	1 6%	34 6%	12 1%	0 0%	0 0%	3 2%	0 0%	25 3%
1986	3 2%	1 3%	0 0%	0 8%	13 4%	7 7%	2 8%	1 4%	44 6%	6 9%	0 0%	0 0%	0 0%	0 0%	17 8%
1987	10 5%	0 0%	1 0%	4 2%	2 7%	2 5%	2 9%	4 7%	31 3%	5 0%	0 0%	0 9%	0 7%	0 0%	33 6%
1988	3 0%	2 0%	0 0%	2 6%	1 3%	10 0%	1 3%	3 3%	35 4%	4 3%	2 0%	0 0%	1 5%	0 0%	33 4%
1989	4 5%	3 7%	0 8%	3 7%	0 5%	0 8%	1 8%	5 2%	41 6%	7 4%	0 0%	0 3%	0 0%	1 2%	28 4%
1990	5 1%	5 0%	0 0%	7 0%	1 7%	6 4%	2 5%	3 2%	24 0%	10 4%	0 0%	0 1%	0 0%	2 5%	32 0%
1991	3 3%	0 7%	0 0%	2 5%	1 4%	2 7%	1 9%	2 2%	48 9%	5 1%	0 0%	0 5%	0 4%	0 0%	30 4%
1992	4 0%	0 0%	2 7%	6 0%	6 2%	1 5%	7 5%	3 5%	43 7%	3 4%	0 0%	0 0%	0 4%	0 0%	21 1%
1993	1 6%	2 8%	0 0%	1 6%	4 7%	2 6%	3 0%	1 8%	48 4%	6 1%	0 0%	0 0%	0 0%	1 2%	26 1%
1994	5 1%	0 0%	0 0%	1 8%	1 8%	3 2%	1 8%	2 9%	37 2%	2 2%	0 0%	0 0%	2 9%	0 0%	41 2%
1995	7 4%	0 0%	0 0%	2 2%	0 0%	8 7%	3 5%	0 0%	22 5%	3 0%	0 0%	0 0%	0 0%	0 0%	52 8%
1996	3 3%	0 0%	0 0%	0 6%	0 0%	0 9%	1 5%	0 3%	51 5%	0 3%	0 0%	0 0%	0 0%	1 2%	40 4%
1997	3 9%	0 0%	0 0%	5 7%	1 7%	1 7%	2 6%	0 0%	31 7%	3 0%	4 3%	0 0%	0 0%	0 0%	45 2%
1998	7 4%	1 0%	0 0%	0 0%	0 0%	0 0%	8 8%	0 0%	21 6%	0 5%	0 0%	0 0%	0 0%	0 0%	60 8%
1999	6 3%	5 9%	0 0%	2 4%	2 8%	0 0%	4 5%	0 0%	12 5%	0 0%	3 8%	0 0%	0 7%	0 0%	61 0%
2000	16 0%	2 0%	0 0%	0 0%	0 0%	0 4%	5 2%	0 0%	12 4%	0 0%	0 0%	0 0%	3 6%	0 0%	60 4%
2001	4 4%	16 5%	0 0%	0 0%	0 0%	0 0%	12 3%	0 5%	10 4%	0 0%	0 0%	0 0%	1 8%	0 0%	54 0%
2002	10 3%	0 0%	3 0%	2 7%	0 0%	0 0%	13 9%	1 9%	10 1%	4 6%	3 0%	0 0%	1 9%	0 8%	47 8%
2003	8 9%	1 9%	2 2%	0 0%	0 0%	0 0%	13 0%	3 3%	10 7%	0 0%	0 0%	0 0%	0 0%	0 0%	60 0%
2004	8 1%	0 0%	0 2%	4 6%	0 0%	0 0%	7 1%	1 2%	10 3%	0 0%	0 0%	0 5%	1 5%	0 0%	66 5%
2005	10 4%	0 7%	0 0%	2 1%	0 0%	1 1%	13 0%	4 9%	8 3%	0 0%	3 0%	0 5%	3 5%	0 7%	51 8%
(79-84)	3 6%	0 7%	0 6%	3 4%	8 9%	4 8%	1 8%	2 9%	40 7%	9 7%	0 1%	0 0%	0 3%	0 5%	22 1%
(85-98)	4 9%	1 3%	0 3%	2 9%	2 8%	4 0%	3 1%	2 2%	36 9%	5 0%	0 5%	0 1%	0 7%	0 4%	34 9%
(99-05)	9 2%	3 9%	0 8%	1 7%	0 4%	0 2%	9 9%	1 7%	10 7%	0 7%	1 4%	0 1%	1 9%	0 2%	57 4%

Appendix E.13. Percent distribution of Cowichan River Fall Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Gwslt Trl&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1990	0.0%	0.0%	0.0%	0.0%	1.4%	4.6%	0.3%	1.3%	52.0%	12.8%	0.0%	0.7%	3.1%	2.2%	21.6%
1991	0.1%	0.0%	0.0%	0.2%	0.2%	0.6%	1.5%	3.2%	57.3%	4.8%	0.7%	0.9%	3.6%	0.8%	26.0%
1992	0.1%	0.0%	0.0%	0.4%	1.1%	1.2%	0.9%	9.6%	63.1%	4.3%	1.4%	0.3%	1.4%	1.3%	15.1%
1993	0.2%	0.0%	0.0%	0.1%	0.5%	0.6%	1.5%	7.8%	59.6%	3.4%	1.6%	0.6%	0.9%	0.5%	22.8%
1994	0.6%	0.0%	0.0%	0.4%	0.2%	2.3%	0.0%	4.1%	37.9%	6.3%	0.9%	0.4%	3.7%	0.5%	42.7%
1995	0.3%	0.0%	0.0%	0.0%	0.0%	1.2%	0.0%	4.0%	33.2%	0.5%	0.6%	0.0%	2.2%	0.7%	57.3%
1996	0.3%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	42.6%	0.4%	1.1%	0.0%	0.9%	3.6%	50.6%
1997	0.9%	0.0%	0.0%	0.0%	0.0%	0.5%	0.6%	2.8%	25.3%	0.2%	1.1%	0.0%	3.7%	2.9%	62.1%
1998	3.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.5%	26.7%	0.3%	1.5%	0.0%	2.8%	0.0%	63.7%
1999	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	38.7%	1.2%	4.1%	1.0%	6.8%	0.7%	46.5%
2000	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	19.2%	0.0%	3.7%	0.0%	4.2%	1.3%	69.0%
2001	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	9.5%	26.7%	0.3%	0.0%	0.2%	11.8%	1.0%	49.3%
2002	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	4.3%	3.8%	32.2%	0.2%	3.4%	0.6%	3.7%	4.0%	46.8%
2003	2.4%	0.3%	0.0%	2.8%	3.8%	0.0%	4.5%	11.1%	23.0%	0.0%	2.4%	0.7%	7.7%	2.8%	38.3%
2004	0.0%	0.3%	0.0%	0.6%	0.0%	0.0%	4.3%	16.0%	21.2%	2.5%	15.6%	2.5%	6.1%	1.8%	29.1%
2005	0.0%	0.3%	0.0%	1.0%	0.0%	1.0%	7.9%	24.0%	8.6%	0.0%	2.1%	0.3%	15.1%	1.7%	38.0%
(90-98)	0.7%	0.0%	0.0%	0.1%	0.4%	1.3%	0.6%	3.7%	44.2%	3.7%	1.0%	0.3%	2.5%	1.4%	40.2%
(99-05)	0.7%	0.1%	0.0%	0.6%	0.5%	0.1%	3.3%	9.4%	24.2%	0.6%	4.5%	0.8%	7.9%	1.9%	45.3%

Appendix E.14. Percent distribution of Cowichan River Fall Chinook total fishing mortalities among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Gwslt Trl&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1990	0.0%	0.0%	0.0%	0.1%	1.4%	3.6%	0.6%	2.8%	58.5%	9.9%	0.1%	0.8%	4.5%	2.6%	15.1%
1991	0.1%	0.0%	0.0%	0.2%	0.4%	0.6%	1.4%	4.3%	62.0%	4.2%	0.7%	0.8%	3.6%	0.9%	20.6%
1992	0.1%	0.1%	0.0%	0.4%	1.1%	1.0%	0.9%	9.7%	66.7%	3.6%	1.2%	0.3%	1.4%	1.4%	12.0%
1993	0.3%	0.0%	0.0%	0.1%	0.5%	0.5%	1.4%	8.2%	63.7%	2.9%	1.4%	0.6%	0.9%	0.5%	18.9%
1994	0.6%	0.0%	0.0%	0.4%	0.3%	2.3%	0.0%	4.4%	42.9%	6.3%	0.8%	0.4%	4.6%	0.7%	36.4%
1995	0.4%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	5.6%	37.0%	1.5%	0.6%	0.0%	2.5%	1.0%	49.9%
1996	0.3%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	0.3%	47.3%	0.5%	1.1%	0.0%	1.1%	5.3%	43.5%
1997	1.2%	0.0%	0.0%	0.0%	0.0%	0.4%	0.7%	3.5%	29.2%	1.1%	1.1%	0.0%	4.2%	3.9%	54.7%
1998	4.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	0.5%	30.8%	0.5%	1.6%	0.0%	3.9%	0.0%	57.6%
1999	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	0.0%	43.5%	1.0%	4.1%	1.0%	9.0%	0.6%	39.4%
2000	1.6%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	22.4%	0.0%	4.1%	0.0%	5.3%	2.4%	62.5%
2001	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	8.9%	30.2%	0.3%	0.0%	0.1%	14.1%	3.1%	41.9%
2002	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	4.8%	3.5%	37.1%	0.1%	3.5%	0.6%	3.9%	5.4%	39.7%
2003	2.5%	0.8%	0.0%	2.8%	5.0%	0.0%	5.6%	9.8%	25.8%	0.0%	2.5%	0.6%	9.5%	4.2%	30.9%
2004	0.0%	0.8%	0.0%	0.5%	0.0%	0.0%	5.7%	14.1%	24.7%	2.3%	15.9%	2.6%	6.9%	2.1%	24.4%
2005	0.0%	0.6%	0.0%	1.2%	0.0%	1.2%	9.8%	22.5%	9.8%	0.0%	2.3%	0.3%	18.4%	2.0%	32.0%
(90-98)	0.8%	0.0%	0.0%	0.1%	0.4%	1.1%	0.7%	4.4%	48.7%	3.4%	1.0%	0.3%	3.0%	1.8%	34.3%
(99-05)	0.8%	0.4%	0.0%	0.6%	0.7%	0.2%	4.0%	8.6%	27.6%	0.5%	4.6%	0.7%	9.6%	2.8%	38.7%

Appendix E.15. Percent distribution of Chilliwack River Fall Chinook reported catch among fisheries and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1985	0 5%	0 0%	0 0%	0 3%	2 3%	0 8%	0 2%	34 5%	28 9%	5 9%	0 0%	4 0%	4 2%	3 7%	14 6%
1986	0 0%	0 0%	0 0%	0 8%	2 5%	1 5%	0 2%	19 5%	28 2%	12 6%	0 0%	2 6%	4 0%	5 8%	22 2%
1987	0 0%	0 0%	0 0%	0 7%	0 4%	0 3%	0 3%	16 2%	35 4%	2 2%	0 5%	3 8%	3 9%	2 7%	33 5%
1988	0 4%	0 1%	0 0%	0 2%	0 0%	0 1%	0 0%	17 9%	19 7%	2 2%	0 0%	4 2%	3 0%	1 8%	50 3%
1989	0 3%	0 0%	0 0%	0 0%	0 0%	0 5%	0 0%	19 5%	17 4%	3 7%	0 0%	5 3%	3 8%	1 4%	48 3%
1990	0 9%	0 0%	0 0%	0 0%	0 2%	1 5%	0 3%	9 4%	15 3%	4 3%	2 4%	6 2%	12 1%	5 6%	41 9%
1991	0 2%	0 1%	0 0%	0 4%	0 2%	1 0%	0 2%	18 3%	21 9%	4 2%	0 7%	13 4%	5 3%	4 6%	29 5%
1992	0 3%	0 0%	0 0%	0 1%	0 6%	0 3%	0 2%	18 0%	16 1%	1 0%	0 1%	8 3%	0 9%	3 4%	50 7%
1993	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 4%	11 9%	14 7%	1 5%	0 4%	7 1%	0 0%	0 9%	63 0%
1994	0 3%	0 2%	0 0%	0 7%	0 3%	1 6%	0 0%	6 5%	13 5%	4 4%	2 4%	1 6%	3 8%	3 6%	61 0%
1995	0 0%	0 0%	0 0%	0 0%	0 0%	0 7%	0 2%	8 8%	6 5%	0 6%	0 5%	1 2%	1 1%	1 7%	78 9%
1996	0 2%	0 0%	0 0%	0 0%	0 0%	1 1%	0 0%	0 0%	15 7%	1 1%	0 5%	4 5%	0 9%	2 8%	73 1%
1997	0 7%	0 0%	0 0%	0 1%	0 4%	0 6%	0 6%	9 9%	15 1%	1 5%	2 0%	4 9%	2 3%	3 3%	58 5%
1998	0 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 1%	0 2%	3 9%	0 3%	0 3%	3 0%	0 3%	0 4%	91 1%
1999	0 1%	0 0%	0 0%	0 1%	0 0%	0 0%	0 2%	0 3%	10 3%	0 5%	1 9%	11 6%	0 7%	0 8%	73 5%
2000	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 4%	5 1%	5 8%	0 0%	1 8%	3 8%	0 5%	0 4%	82 1%
2001	0 1%	0 1%	0 0%	0 0%	0 0%	0 0%	0 3%	3 6%	8 6%	0 1%	0 8%	6 3%	0 9%	2 9%	76 4%
2002	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 2%	8 1%	10 1%	0 2%	5 1%	6 8%	0 3%	2 3%	66 6%
2003	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 1%	5 8%	6 9%	0 2%	2 1%	7 6%	0 3%	1 4%	75 4%
2004	0 1%	0 0%	0 0%	0 1%	0 0%	0 0%	0 0%	4 8%	6 5%	0 5%	2 2%	5 8%	0 1%	0 9%	79 0%
2005	0 0%	0 0%	0 0%	0 1%	0 0%	0 1%	0 2%	7 3%	9 8%	1 4%	3 9%	3 4%	0 8%	1 3%	71 7%
(85-98)	0 3%	0 0%	0 0%	0 2%	0 5%	0 7%	0 2%	13 6%	18 0%	3 3%	0 7%	5 0%	3 3%	3 0%	51 2%
(99-05)	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 2%	5 0%	8 3%	0 4%	2 5%	6 5%	0 5%	1 4%	75 0%

Appendix E.16. Percent distribution of Chilliwack River Fall Chinook total fishing mortalities among fisheries and escapement.

										Other Fisheries				
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Geo/St Trk/Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1985	1 1%	0 1%	0 0%	0 4%	2 3%	0 7%	0 2%	34 2%	28 8%	5 7%	0 0%	3 9%	4 9%	4 7%	13 1%
1986	0 0%	0 0%	0 0%	0 8%	2 6%	1 5%	0 2%	20 5%	28 4%	11 6%	0 0%	2 8%	5 0%	7 8%	18 9%
1987	0 0%	0 0%	0 0%	0 8%	0 5%	0 3%	0 3%	19 0%	35 8%	2 0%	0 5%	4 0%	3 9%	2 9%	29 9%
1988	0 4%	0 2%	0 0%	0 2%	0 0%	0 1%	0 0%	18 6%	20 3%	2 2%	0 0%	4 3%	4 1%	2 9%	46 7%
1989	0 3%	0 0%	0 0%	0 0%	0 0%	0 5%	0 0%	24 0%	20 9%	3 3%	0 0%	6 0%	3 8%	1 5%	39 7%
1990	1 0%	0 0%	0 0%	0 0%	0 1%	1 3%	0 4%	11 3%	15 9%	3 7%	2 2%	6 5%	16 6%	8 7%	32 4%
1991	0 3%	0 2%	0 0%	0 4%	0 2%	0 9%	0 2%	20 0%	24 2%	3 6%	0 7%	13 8%	6 0%	5 3%	24 3%
1992	0 3%	0 0%	0 0%	0 1%	0 7%	0 3%	0 2%	20 2%	18 3%	0 9%	0 1%	8 7%	0 9%	3 7%	45 6%
1993	0 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 4%	13 4%	17 0%	1 4%	0 4%	7 6%	0 0%	1 1%	58 6%
1994	0 4%	0 3%	0 0%	0 8%	0 4%	1 7%	0 0%	8 0%	14 8%	4 9%	2 7%	1 6%	5 5%	6 1%	52 8%
1995	0 0%	0 0%	0 0%	0 0%	0 0%	0 8%	0 2%	13 1%	7 5%	0 9%	0 5%	1 1%	1 4%	2 5%	72 0%
1996	0 2%	0 0%	0 0%	0 1%	0 0%	1 4%	0 0%	2 1%	18 1%	1 3%	0 6%	4 3%	1 2%	4 6%	66 1%
1997	0 8%	0 0%	0 0%	0 2%	0 4%	0 6%	0 8%	12 4%	16 7%	1 8%	1 9%	5 5%	2 5%	4 1%	52 2%
1998	0 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 2%	0 2%	4 5%	0 3%	0 3%	3 4%	0 3%	0 9%	89 3%
1999	0 1%	0 0%	0 0%	0 1%	0 0%	0 0%	0 3%	0 3%	12 2%	0 5%	1 9%	13 6%	0 7%	1 0%	69 3%
2000	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 6%	5 5%	6 6%	0 0%	2 1%	4 5%	0 8%	1 1%	78 7%
2001	0 1%	0 2%	0 0%	0 0%	0 0%	0 0%	0 4%	3 7%	9 9%	0 1%	0 9%	7 2%	1 2%	6 0%	70 3%
2002	0 3%	0 0%	0 0%	0 0%	0 0%	0 1%	0 3%	8 2%	11 4%	0 2%	5 9%	7 8%	0 3%	3 2%	62 3%
2003	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 2%	6 0%	7 8%	0 2%	2 5%	8 7%	0 3%	1 9%	72 3%
2004	0 2%	0 0%	0 0%	0 1%	0 0%	0 0%	0 0%	4 9%	7 1%	0 5%	2 6%	6 7%	0 1%	1 3%	76 5%
2005	0 0%	0 0%	0 0%	0 1%	0 0%	0 1%	0 2%	7 5%	10 7%	1 4%	4 5%	3 7%	0 9%	2 0%	68 8%
(85-98)	0 4%	0 1%	0 0%	0 3%	0 5%	0 7%	0 2%	15 5%	19 4%	3 1%	0 7%	5 3%	4 0%	4 1%	45 8%
(99-05)	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 3%	5 2%	9 4%	0 4%	2 9%	7 5%	0 6%	2 4%	71 2%

Appendix E.17. Percent distribution of Nooksack Spring Fingerling Chinook reported catch among fisheries and escapement.

										Other Fisheries					
Catch[1] Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1996	1 4%	0 0%	0 0%	0 0%	0 0%	5 1%	1 3%	0 0%	16 8%	0 2%	4 2%	0 7%	0 3%	6 4%	63 6%
1997	3 5%	0 2%	0 7%	0 2%	0 1%	0 4%	0 2%	1 6%	10 3%	0 1%	2 9%	0 5%	1 3%	5 2%	73 0%
1998	8 1%	0 2%	0 0%	0 0%	0 0%	0 1%	0 0%	1 7%	2 9%	0 0%	2 4%	0 2%	0 1%	0 6%	83 6%
1999	1 6%	0 9%	0 0%	0 0%	0 0%	0 0%	1 1%	1 1%	3 6%	0 0%	5 5%	1 3%	0 0%	0 7%	84 2%
2000	4 7%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	19 8%	12 1%	0 0%	3 9%	0 2%	0 2%	0 4%	58 5%
2001	1 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	9 3%	4 5%	0 0%	3 3%	1 0%	0 9%	0 7%	78 9%
2002	5 6%	0 0%	0 5%	0 7%	0 0%	0 0%	1 5%	17 2%	1 6%	0 0%	2 6%	0 2%	0 2%	0 9%	69 0%
2003	3 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 6%	14 7%	5 8%	0 0%	1 5%	0 0%	1 4%	1 8%	71 3%
2004	1 4%	0 0%	0 0%	0 4%	0 0%	0 0%	0 0%	27 5%	5 0%	0 0%	6 2%	3 0%	0 0%	1 6%	54 9%
2005	3 5%	0 1%	0 0%	0 3%	0 0%	0 4%	0 0%	34 5%	3 3%	0 0%	4 1%	0 5%	0 3%	0 8%	52 3%
(96-98)	4 3%	0 1%	0 2%	0 1%	0 0%	1 9%	0 5%	1 1%	10 0%	0 1%	3 2%	0 5%	0 6%	4 1%	73 4%
(99-05)	3 0%	0 2%	0 1%	0 2%	0 0%	0 1%	0 5%	17 7%	5 1%	0 0%	3 9%	0 9%	0 4%	1 0%	67 0%

Appendix E.18. Percent distribution of Nooksack Spring Fingerling Chinook total fishing mortalities among fisheries and escapement.

										Other Fisheries					
Catch[1] Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1996	3 3%	0 0%	0 2%	0 0%	0 0%	5 8%	1 7%	0 7%	18 5%	0 5%	4 1%	0 7%	0 3%	9 4%	54 9%
1997	4 0%	0 4%	0 8%	0 3%	0 0%	0 4%	0 2%	2 0%	11 4%	0 9%	2 9%	0 6%	1 3%	6 4%	68 4%
1998	8 8%	0 5%	0 0%	0 0%	0 0%	0 2%	0 0%	1 8%	3 3%	0 0%	2 7%	0 2%	0 1%	1 1%	81 3%
1999	2 0%	2 4%	0 0%	0 0%	0 0%	0 0%	1 3%	1 1%	4 3%	0 0%	5 8%	1 5%	0 0%	1 1%	80 4%
2000	5 4%	0 3%	0 0%	0 0%	0 0%	0 0%	0 0%	20 2%	13 7%	0 0%	4 6%	0 2%	0 2%	0 7%	54 7%
2001	2 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	9 4%	5 4%	0 0%	3 7%	1 2%	0 8%	1 7%	75 8%
2002	6 4%	0 0%	0 6%	0 8%	0 0%	0 0%	1 8%	17 3%	2 1%	0 0%	3 0%	0 2%	0 2%	1 2%	66 5%
2003	3 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 8%	15 3%	7 0%	0 0%	1 8%	0 0%	1 3%	3 4%	67 2%
2004	1 8%	0 0%	0 0%	0 3%	0 0%	0 0%	0 0%	27 0%	6 5%	0 0%	7 0%	3 5%	0 0%	2 2%	51 6%
2005	3 8%	0 1%	0 0%	0 2%	0 0%	0 5%	0 0%	34 9%	4 0%	0 0%	4 6%	0 5%	0 2%	1 1%	49 9%
(96-98)	5 4%	0 3%	0 3%	0 1%	0 0%	2 1%	0 6%	1 5%	11 1%	0 5%	3 2%	0 5%	0 6%	5 6%	68 2%
(99-05)	3 5%	0 4%	0 1%	0 2%	0 0%	0 1%	0 6%	17 9%	6 1%	0 0%	4 4%	1 0%	0 4%	1 6%	63 7%

Appendix E.19. Percent distribution of Nooksack Spring Yearling Chinook reported catch among fisheries and escapement.

Catch[1] Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1986	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	8 9%	4 7%	0 0%	0 0%	0 0%	1 6%	84 8%
1989	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	6 0%	0 0%	0 0%	0 0%	13 8%	6 9%	73 3%
1990	0 0%	0 0%	0 0%	0 0%	0 0%	4 9%	0 0%	0 0%	14 6%	9 8%	0 0%	2 4%	4 9%	34 1%	29 3%
1991	0 0%	0 0%	0 0%	0 0%	0 0%	0 7%	0 0%	2 1%	32 6%	5 6%	7 0%	2 1%	8 4%	5 3%	36 1%
1992	0 4%	0 4%	0 0%	0 0%	0 9%	0 6%	0 4%	17 4%	12 3%	1 1%	2 3%	0 9%	0 4%	7 8%	55 3%
1993	0 0%	0 0%	0 0%	0 0%	0 0%	0 5%	0 0%	4 4%	14 7%	6 0%	7 6%	0 8%	5 3%	11 5%	49 2%
1994	0 6%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	5 1%	34 2%	1 0%	0 0%	0 2%	6 3%	3 3%	49 3%
1995	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	22 8%	0 0%	0 0%	0 0%	2 9%	7 0%	67 3%
1996	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 1%	0 0%	12 4%	0 0%	3 2%	0 5%	0 0%	3 2%	79 6%
1997	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	14 2%	2 7%	5 3%	0 0%	3 5%	15 9%	58 4%
1998	0 0%	0 0%	0 0%	0 0%	0 0%	3 5%	3 5%	0 0%	15 9%	0 9%	6 2%	0 0%	4 4%	5 3%	60 2%
1999	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 8%	25 4%	0 0%	1 1%	2 8%	5 0%	1 1%	61 9%
(86-98)	0 1%	0 0%	0 0%	0 0%	0 1%	0 9%	0 5%	2 6%	17 1%	2 9%	2 9%	0 6%	4 5%	9 3%	58 4%
(1999)	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 8%	25 4%	0 0%	1 1%	2 8%	5 0%	1 1%	61 9%

[1] No data are shown for 2000-2004 because of lack of coded-wire tagging of broods from 1997-2000

Appendix E.20. Percent distribution of Nooksack Spring Yearling Chinook total fishing mortalities among fisheries and escapement.

Catch[1] Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1986	0 0%	0 0%	0 0%	0 0%	0 4%	0 0%	0 0%	2 1%	11 8%	4 6%	0 8%	0 4%	8 0%	3 8%	68 1%
1989	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	8 1%	0 0%	0 0%	0 0%	14 5%	8 9%	68 5%
1990	0 0%	0 0%	0 0%	0 0%	1 4%	4 2%	0 0%	8 5%	26 8%	8 5%	1 4%	1 4%	2 8%	28 2%	16 9%
1991	0 0%	0 0%	0 0%	0 0%	0 0%	0 6%	0 0%	2 4%	36 9%	5 7%	6 8%	2 4%	7 7%	6 8%	30 7%
1992	2 0%	0 9%	0 0%	0 0%	1 0%	0 6%	0 4%	19 5%	13 7%	1 0%	2 3%	1 0%	0 4%	9 7%	47 4%
1993	0 0%	0 0%	0 0%	0 0%	0 0%	0 5%	0 0%	4 8%	17 6%	5 7%	7 7%	0 8%	5 1%	12 3%	45 6%
1994	0 6%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	5 1%	35 8%	0 9%	0 0%	0 2%	6 0%	3 8%	47 5%
1995	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	24 5%	0 5%	0 0%	0 0%	3 1%	12 0%	59 9%
1996	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 0%	0 5%	14 6%	0 0%	3 5%	0 5%	0 0%	5 5%	74 4%
1997	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	15 6%	2 3%	5 5%	0 0%	3 1%	21 9%	51 6%
1998	0 0%	0 0%	0 0%	0 0%	0 0%	3 9%	5 4%	0 0%	17 1%	1 6%	6 2%	0 0%	3 9%	9 3%	52 7%
1999	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 6%	28 0%	0 0%	1 6%	3 1%	4 7%	2 1%	58 0%
(86-98)	0 2%	0 1%	0 0%	0 0%	0 3%	0 9%	0 6%	3 9%	20 2%	2 8%	3 1%	0 6%	5 0%	11 1%	51 2%
(1999)	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 6%	28 0%	0 0%	1 6%	3 1%	4 7%	2 1%	58 0%

[1] No data are shown for 2000-2004 because of lack of coded-wire tagging of broods from 1997-2000

Appendix E.21. Percent distribution of Skagit Spring Fingerling Chinook reported catch among fisheries and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1997	1 0%	0 0%	0 0%	0 4%	0 6%	1 5%	0 9%	1 4%	8 7%	0 2%	4 0%	0 0%	1 4%	7 3%	72 5%
1998	2 0%	0 0%	0 0%	0 0%	0 0%	0 6%	1 1%	0 0%	9 4%	0 3%	3 0%	0 0%	1 7%	2 6%	79 4%
1999	0 5%	0 6%	0 0%	0 2%	0 0%	0 1%	0 7%	0 5%	4 7%	0 0%	6 1%	0 3%	1 2%	1 7%	83 4%
2000	1 6%	0 0%	0 4%	0 0%	0 0%	0 0%	0 4%	5 6%	9 3%	0 1%	5 4%	0 0%	0 2%	2 5%	74 6%
2001	1 3%	0 2%	0 3%	0 2%	0 0%	0 0%	1 2%	5 0%	6 0%	0 0%	2 7%	0 2%	0 7%	4 3%	77 9%
2002	2 6%	0 0%	0 5%	0 2%	0 0%	0 1%	1 1%	4 7%	5 8%	0 0%	5 2%	0 3%	0 6%	2 6%	76 4%
2003	2 1%	0 0%	0 9%	1 1%	0 0%	0 1%	1 3%	22 3%	4 3%	0 0%	0 7%	1 3%	0 9%	1 1%	64 0%
2004	0 0%	0 0%	0 0%	0 4%	0 0%	0 0%	0 0%	10 8%	8 9%	0 0%	2 9%	2 2%	1 3%	1 5%	71 9%
2005	1 3%	0 1%	0 0%	0 0%	0 0%	0 2%	2 3%	12 9%	4 3%	0 0%	5 6%	0 0%	0 3%	4 2%	68 7%
(97-98)	1 5%	0 0%	0 0%	0 2%	0 3%	1 1%	1 0%	0 7%	9 1%	0 3%	3 5%	0 0%	1 6%	5 0%	76 0%
(99-05)	1 3%	0 1%	0 3%	0 3%	0 0%	0 1%	1 0%	8 8%	6 2%	0 0%	4 1%	0 6%	0 7%	2 6%	73 8%

Appendix E.22. Percent distribution of Skagit Spring Fingerling Chinook total fishing mortalities among fisheries and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1997	1 2%	0 0%	0 0%	0 4%	0 5%	1 8%	1 2%	1 6%	9 9%	1 1%	4 3%	0 0%	1 3%	8 9%	67 5%
1998	2 2%	0 0%	0 0%	0 0%	0 0%	0 7%	1 8%	0 0%	10 8%	0 3%	3 4%	0 0%	1 5%	6 3%	73 0%
1999	0 9%	1 3%	0 0%	0 2%	0 0%	0 1%	0 9%	0 6%	5 8%	0 0%	6 6%	0 4%	1 3%	2 8%	79 2%
2000	2 0%	0 0%	0 6%	0 0%	0 0%	0 0%	0 6%	6 0%	11 0%	0 3%	6 1%	0 0%	0 2%	5 1%	68 2%
2001	1 8%	0 4%	0 4%	0 3%	0 0%	0 0%	1 6%	4 9%	6 7%	0 0%	2 9%	0 2%	0 7%	9 6%	70 8%
2002	2 8%	0 0%	0 6%	0 2%	0 0%	0 1%	1 3%	4 6%	7 4%	0 0%	6 0%	0 3%	0 6%	3 7%	72 3%
2003	2 3%	0 0%	0 9%	1 2%	0 0%	0 1%	1 6%	22 8%	5 3%	0 0%	0 8%	1 4%	0 8%	1 8%	60 9%
2004	0 0%	0 0%	0 0%	0 4%	0 0%	0 0%	0 0%	11 0%	11 2%	0 0%	3 3%	2 7%	1 3%	2 4%	67 7%
2005	1 6%	0 2%	0 0%	0 0%	0 0%	0 3%	3 3%	13 3%	5 5%	0 0%	6 5%	0 0%	0 3%	4 8%	64 1%
(97-98)	1 7%	0 0%	0 0%	0 2%	0 3%	1 3%	1 5%	0 8%	10 4%	0 7%	3 9%	0 0%	1 4%	7 6%	70 3%
(99-05)	1 6%	0 3%	0 4%	0 3%	0 0%	0 1%	1 3%	9 0%	7 6%	0 0%	4 6%	0 7%	0 7%	4 3%	69 0%

Appendix E.23. Percent distribution of Skagit Spring Yearling Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1985	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	6 7%	29 2%	26 7%	0 0%	0 0%	10 0%	15 8%	11 7%
1986	1 4%	0 0%	0 0%	0 0%	4 3%	6 6%	0 0%	6 2%	41 7%	2 8%	5 7%	0 0%	3 3%	7 6%	20 4%
1987	0 0%	0 0%	0 0%	4 6%	0 0%	6 5%	0 0%	3 7%	10 2%	5 6%	0 0%	1 9%	24 1%	20 4%	23 1%
1988	0 0%	0 0%	0 0%	0 0%	0 0%	5 9%	0 0%	1 8%	14 9%	7 7%	9 6%	1 8%	20 6%	14 5%	23 2%
1989	0 0%	0 0%	0 0%	0 0%	0 8%	0 1%	0 0%	3 4%	17 5%	3 3%	1 8%	4 3%	30 4%	8 4%	29 9%
1990	0 0%	0 0%	0 0%	0 0%	0 4%	1 9%	1 0%	4 9%	14 0%	4 0%	8 7%	3 4%	15 4%	22 9%	23 3%
1997	0 0%	0 0%	0 0%	0 0%	0 0%	1 1%	0 0%	2 0%	19 6%	1 6%	10 2%	0 0%	2 4%	20 9%	42 2%
1998	0 5%	0 0%	0 0%	0 0%	0 0%	0 2%	3 5%	1 3%	9 1%	0 0%	7 3%	0 0%	3 2%	17 1%	57 7%
1999	0 6%	0 0%	0 0%	0 0%	0 0%	0 0%	0 3%	1 2%	7 7%	0 0%	4 5%	0 2%	1 1%	9 1%	75 4%
2000	0 8%	0 0%	0 0%	0 0%	0 0%	0 0%	0 8%	6 6%	15 3%	0 0%	2 5%	0 0%	1 5%	15 6%	56 9%
2001	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 2%	12 1%	0 0%	1 2%	3 2%	2 0%	10 9%	67 2%
2002	1 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 7%	12 5%	0 0%	17 6%	0 0%	1 5%	8 1%	58 6%
2003	0 0%	0 0%	0 0%	0 8%	0 0%	0 0%	0 3%	25 6%	9 6%	0 0%	2 8%	0 1%	0 7%	7 0%	52 9%
2004	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 8%	12 5%	4 5%	0 0%	4 1%	0 8%	1 0%	4 0%	72 1%
2005	1 0%	0 0%	0 0%	0 2%	0 0%	0 0%	0 0%	7 4%	5 7%	0 4%	5 6%	0 3%	1 1%	13 2%	65 2%
(85-98)	0 2%	0 0%	0 0%	0 6%	0 7%	2 8%	0 6%	3 8%	19 5%	6 5%	5 4%	1 4%	13 7%	16 0%	28 9%
(99-05)	0 5%	0 0%	0 0%	0 1%	0 0%	0 0%	0 3%	8 2%	9 6%	0 1%	5 5%	0 7%	1 3%	9 7%	64 0%

Appendix E.24. Percent distribution of Skagit Spring Yearling Chinook total fishing mortalities among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1985	0 0%	0 0%	0 0%	0 0%	0 0%	0 8%	0 0%	6 9%	29 2%	24 6%	0 0%	0 0%	9 2%	18 5%	10 8%
1986	1 8%	0 0%	0 0%	0 0%	4 0%	6 6%	0 0%	6 2%	41 6%	2 7%	5 8%	0 0%	3 1%	9 3%	19 0%
1987	0 0%	0 0%	0 0%	4 9%	0 0%	4 9%	0 0%	3 1%	7 4%	4 3%	0 0%	1 2%	19 0%	39 9%	15 3%
1988	0 0%	0 0%	0 0%	0 0%	0 0%	5 5%	0 0%	2 4%	17 6%	7 1%	9 3%	2 1%	19 5%	16 2%	20 3%
1989	0 0%	0 0%	0 0%	0 0%	0 8%	0 1%	0 0%	4 0%	19 5%	3 3%	1 9%	4 7%	28 2%	10 4%	26 9%
1990	0 0%	0 0%	0 0%	0 0%	0 4%	1 9%	1 1%	5 1%	14 8%	3 7%	8 6%	3 7%	14 6%	24 6%	21 6%
1997	0 3%	0 0%	0 0%	0 0%	0 0%	0 8%	1 0%	2 6%	19 3%	2 8%	9 0%	0 0%	1 8%	31 1%	31 1%
1998	0 7%	0 0%	0 0%	0 0%	0 0%	0 2%	4 0%	1 2%	10 1%	0 2%	7 1%	0 0%	3 0%	21 1%	52 4%
1999	0 7%	0 0%	0 0%	0 0%	0 0%	0 0%	0 3%	1 2%	8 1%	0 0%	4 7%	0 2%	1 0%	12 7%	71 3%
2000	0 7%	0 0%	0 0%	0 0%	0 0%	0 0%	0 9%	6 2%	16 1%	0 0%	2 7%	0 0%	1 4%	19 8%	52 2%
2001	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 9%	11 7%	0 0%	1 3%	2 9%	1 6%	27 0%	52 7%
2002	0 9%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 6%	15 7%	0 0%	18 9%	0 0%	1 3%	12 3%	50 3%
2003	0 0%	0 0%	0 0%	0 9%	0 0%	0 0%	0 4%	25 0%	11 7%	0 0%	3 2%	0 1%	0 7%	9 5%	48 7%
2004	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	1 2%	12 6%	5 5%	0 0%	4 6%	0 9%	1 0%	5 9%	68 1%
2005	1 1%	0 0%	0 0%	0 2%	0 0%	0 0%	0 0%	7 1%	6 5%	0 4%	6 3%	0 3%	1 1%	15 2%	62 0%
(85-98)	0 4%	0 0%	0 0%	0 6%	0 7%	2 6%	0 8%	3 9%	19 9%	6 1%	5 2%	1 5%	12 3%	21 4%	24 7%
(99-05)	0 5%	0 0%	0 0%	0 2%	0 0%	0 0%	0 4%	7 9%	10 8%	0 1%	6 0%	0 6%	1 2%	14 6%	57 9%

Appendix E.25. Percent distribution of Samish Fall Fingerling Chinook reported catch among fisheries and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	NCBC Net	NCBC Sport	WCVI Troll	Goodt Trol/Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1989	0.0%	0.0%	0.0%	0.2%	0.2%	0.2%	0.3%	6.8%	17.2%	3.5%	1.9%	7.4%	36.2%	9.7%	16.5%
1990	2.1%	0.0%	0.0%	0.5%	0.1%	0.2%	0.0%	18.5%	12.9%	1.3%	2.0%	9.0%	30.5%	7.4%	15.4%
1991	0.0%	0.0%	0.0%	0.0%	0.1%	0.3%	0.0%	13.4%	11.3%	2.6%	3.2%	8.9%	23.0%	10.8%	26.4%
1992	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.5%	11.4%	14.6%	2.1%	0.9%	10.2%	15.6%	17.2%	27.4%
1993	0.0%	0.0%	0.0%	0.3%	0.2%	0.5%	0.3%	12.3%	19.0%	2.3%	8.5%	3.9%	16.5%	12.7%	23.6%
1994	0.2%	0.0%	0.0%	0.4%	0.0%	0.4%	0.0%	11.8%	13.8%	1.9%	5.4%	2.2%	38.5%	3.9%	21.2%
1995	0.3%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	5.8%	5.1%	0.3%	3.4%	3.4%	27.2%	15.0%	38.8%
1996	0.0%	0.1%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	10.7%	0.1%	0.7%	1.9%	33.9%	24.1%	28.1%
1997	0.5%	0.2%	0.0%	0.3%	0.7%	0.8%	0.3%	2.0%	8.2%	0.1%	1.8%	0.9%	34.5%	9.8%	40.0%
1998	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	10.9%	0.0%	1.7%	0.7%	44.2%	4.1%	33.3%
1999	3.7%	0.0%	0.0%	1.2%	0.0%	0.0%	3.3%	1.6%	11.0%	0.0%	10.2%	1.6%	38.6%	3.7%	25.2%
2000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.5%	6.5%	0.0%	8.5%	0.4%	38.1%	1.5%	33.5%
2001	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%	0.3%	4.9%	8.5%	0.0%	3.3%	2.5%	40.3%	4.1%	35.9%
2002	0.8%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	8.6%	7.6%	0.0%	7.1%	2.8%	36.5%	5.0%	31.3%
2003	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	14.6%	5.0%	0.3%	2.2%	6.1%	38.7%	2.7%	29.6%
2004	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.2%	4.3%	0.0%	6.4%	10.7%	32.2%	6.1%	32.8%
2005	0.3%	0.2%	0.0%	0.3%	0.0%	0.0%	0.0%	11.7%	6.3%	0.0%	8.2%	7.7%	37.4%	4.5%	23.3%
(89-98)	0.6%	0.0%	0.0%	0.2%	0.1%	0.4%	0.1%	8.4%	12.4%	1.4%	3.0%	4.9%	30.0%	11.5%	27.1%
(99-05)	0.9%	0.1%	0.0%	0.3%	0.0%	0.0%	0.5%	8.6%	7.0%	0.0%	6.6%	4.5%	37.4%	3.9%	30.2%

Appendix E.26. Percent distribution of Samish Fall Fingerling Chinook total fishing mortalities among fisheries and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	NCBC Net	NCBC Sport	WCVI Troll	Goodt Trol/Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1989	0.2%	0.0%	0.0%	0.2%	0.2%	0.2%	0.2%	9.1%	18.4%	3.1%	1.8%	8.0%	33.3%	11.0%	14.3%
1990	2.1%	0.0%	0.0%	0.5%	0.1%	0.2%	0.0%	19.9%	13.5%	1.3%	2.0%	9.3%	28.7%	8.2%	14.2%
1991	0.0%	0.0%	0.0%	0.0%	0.1%	0.4%	0.0%	14.5%	12.3%	2.5%	3.2%	9.4%	21.6%	12.0%	24.1%
1992	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.6%	11.6%	15.3%	1.8%	0.8%	9.9%	14.2%	23.8%	21.8%
1993	0.0%	0.0%	0.0%	0.3%	0.2%	0.4%	0.3%	14.0%	21.7%	2.0%	8.0%	4.1%	15.3%	13.6%	20.1%
1994	0.5%	0.0%	0.0%	0.5%	0.0%	0.4%	0.0%	13.1%	15.1%	1.9%	5.5%	2.1%	37.0%	4.6%	19.3%
1995	0.2%	0.0%	0.0%	0.0%	0.0%	0.9%	0.0%	7.3%	5.3%	0.7%	3.3%	3.0%	24.3%	22.6%	32.3%
1996	0.0%	0.1%	0.0%	0.1%	0.0%	0.4%	0.0%	1.0%	11.4%	0.2%	0.7%	1.7%	32.6%	29.1%	22.9%
1997	0.6%	0.4%	0.0%	0.4%	0.8%	0.8%	0.4%	2.5%	9.3%	0.4%	1.7%	1.1%	33.6%	11.7%	36.5%
1998	3.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	11.9%	0.0%	1.8%	0.8%	43.2%	5.5%	31.6%
1999	4.0%	0.0%	0.0%	1.5%	0.0%	0.0%	3.6%	1.5%	12.4%	0.0%	10.5%	1.8%	36.4%	5.8%	22.5%
2000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.5%	6.9%	0.0%	8.7%	0.3%	40.5%	6.9%	26.1%
2001	0.0%	0.7%	0.0%	0.0%	0.0%	0.2%	0.4%	4.5%	9.8%	0.0%	3.3%	2.7%	38.7%	7.9%	31.7%
2002	0.8%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	8.2%	9.3%	0.0%	7.8%	2.9%	35.0%	6.6%	29.0%
2003	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	14.6%	6.1%	0.6%	2.5%	6.5%	37.5%	3.6%	27.6%
2004	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.9%	5.3%	0.0%	6.9%	11.8%	30.7%	8.9%	29.0%
2005	0.3%	0.3%	0.0%	0.3%	0.0%	0.0%	0.0%	11.4%	7.7%	0.0%	8.9%	8.3%	35.8%	6.1%	20.9%
(89-98)	0.7%	0.1%	0.0%	0.2%	0.1%	0.4%	0.2%	9.5%	13.4%	1.4%	2.9%	4.9%	28.4%	14.2%	23.7%
(99-05)	0.9%	0.1%	0.0%	0.3%	0.0%	0.0%	0.6%	8.2%	8.2%	0.1%	6.9%	4.9%	36.4%	6.5%	26.7%

Appendix E.27. Percent distribution of Skagit Summer Fingerling Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Trl&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1998	3 5%	0 0%	0 0%	0 0%	0 0%	0 0%	1 7%	1 7%	1 7%	0 0%	2 9%	0 0%	0 0%	1 2%	87 3%
1999	7 1%	2 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	7 1%	0 0%	20 2%	0 0%	1 2%	0 0%	61 9%
2000	6 0%	0 9%	0 0%	0 0%	0 0%	0 0%	0 0%	2 3%	6 9%	0 0%	6 9%	0 0%	2 3%	5 5%	69 1%
2001	7 2%	1 9%	0 9%	0 0%	0 0%	0 0%	1 6%	7 6%	8 2%	0 0%	4 3%	0 1%	0 8%	1 4%	65 9%
2002	12 8%	0 0%	0 8%	0 9%	0 0%	0 1%	1 6%	6 4%	3 6%	0 2%	1 7%	0 1%	0 9%	0 0%	70 8%
2003	6 1%	0 1%	0 0%	3 8%	0 0%	0 0%	3 3%	12 2%	5 9%	0 1%	3 2%	0 4%	0 7%	0 7%	63 5%
2004	5 0%	0 0%	0 0%	2 4%	0 0%	0 0%	1 4%	9 7%	1 6%	0 0%	1 3%	0 8%	1 0%	0 5%	76 4%
2005	6 8%	0 2%	0 4%	1 3%	0 0%	0 3%	2 9%	5 1%	1 9%	0 0%	3 9%	0 0%	3 5%	0 8%	72 8%
(1998)	3 5%	0 0%	0 0%	0 0%	0 0%	0 0%	1 7%	1 7%	1 7%	0 0%	2 9%	0 0%	0 0%	1 2%	87 3%
(99-05)	7 3%	0 8%	0 3%	1 2%	0 0%	0 1%	1 5%	6 2%	5 0%	0 0%	5 9%	0 2%	1 5%	1 3%	68 6%

Appendix E.28. Percent distribution of Skagit Summer Fingerling Chinook total fishing mortalities among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Trl&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1998	3 9%	0 0%	0 0%	0 0%	0 0%	0 0%	2 2%	1 7%	2 8%	0 0%	2 8%	0 0%	0 0%	1 7%	84 8%
1999	10 2%	5 1%	0 5%	0 0%	0 0%	0 0%	0 0%	1 5%	7 6%	0 0%	19 3%	0 0%	1 0%	2 0%	52 8%
2000	10 5%	1 1%	0 0%	0 0%	0 0%	0 0%	0 0%	3 4%	7 5%	0 0%	7 1%	0 0%	1 9%	12 0%	56 4%
2001	10 1%	4 5%	1 1%	0 0%	0 0%	0 0%	1 9%	7 0%	9 2%	0 0%	4 4%	0 1%	0 7%	2 7%	58 2%
2002	13 3%	0 0%	0 8%	1 0%	0 0%	0 1%	2 0%	6 2%	4 3%	2 8%	1 9%	0 1%	0 9%	0 0%	66 5%
2003	6 7%	0 6%	0 0%	4 0%	0 0%	0 0%	4 2%	12 2%	6 9%	0 2%	3 8%	0 3%	0 7%	0 8%	59 7%
2004	5 7%	0 0%	0 0%	2 9%	0 0%	0 0%	1 9%	10 0%	2 2%	0 0%	1 4%	0 8%	1 0%	0 7%	73 3%
2005	8 0%	0 5%	0 6%	1 4%	0 0%	0 4%	3 8%	5 2%	2 3%	0 0%	4 5%	0 0%	3 4%	1 1%	68 8%
(1998)	3 9%	0 0%	0 0%	0 0%	0 0%	0 0%	2 2%	1 7%	2 8%	0 0%	2 8%	0 0%	0 0%	1 7%	84 8%
(99-05)	9 2%	1 7%	0 4%	1 3%	0 0%	0 1%	2 0%	6 5%	5 7%	0 4%	6 1%	0 2%	1 4%	2 8%	62 2%

Appendix E.29. Percent distribution of Stillaguamish Fall Fingerling Chinook reported catch among fisheries and escapement (NA=not available).

										Other Fisheries					
Catch[1] Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	NCBC Net	NCBC Sport	WCVI Troll	Goodt Trol/Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1984	0 0%	0 0%	0 0%	3 6%	19 3%	2 4%	3 6%	7 2%	15 7%	24 1%	0 0%	0 0%	4 8%	19 3%	NA [2]
1985	7 2%	0 0%	0 0%	4 1%	0 0%	4 1%	0 0%	29 9%	10 3%	11 3%	9 3%	0 0%	9 3%	13 4%	NA [2]
1986	4 5%	0 0%	0 0%	0 0%	0 0%	4 5%	0 0%	31 8%	20 5%	0 0%	0 0%	0 0%	17 0%	21 6%	NA [2]
1990	0 6%	0 0%	0 0%	0 9%	8 0%	5 3%	0 0%	21 2%	10 0%	5 6%	6 5%	5 6%	9 4%	13 6%	13 3%
1991	0 2%	0 0%	0 0%	0 0%	0 0%	0 1%	0 5%	5 3%	4 0%	1 0%	2 3%	4 6%	6 2%	7 2%	68 6%
1992	0 0%	0 0%	0 0%	0 4%	0 0%	2 4%	0 0%	17 2%	5 1%	2 5%	4 0%	5 7%	12 0%	28 1%	22 5%
1993	0 0%	0 0%	0 0%	0 6%	0 4%	1 0%	1 3%	11 1%	8 4%	1 3%	9 3%	5 2%	1 4%	21 8%	38 1%
1994	2 4%	0 0%	0 0%	0 7%	0 0%	1 3%	0 0%	6 6%	7 7%	0 9%	5 3%	0 0%	2 4%	5 8%	66 8%
1995	2 4%	0 0%	0 0%	0 0%	0 0%	9 8%	0 0%	2 4%	4 2%	1 1%	9 8%	1 1%	2 4%	14 0%	52 9%
1996	0 9%	0 0%	0 0%	0 0%	0 0%	7 8%	1 3%	0 0%	5 9%	0 4%	7 2%	0 0%	0 3%	18 4%	57 7%
1997	9 1%	0 4%	0 0%	0 5%	0 0%	1 5%	1 1%	7 0%	4 8%	0 0%	5 0%	0 0%	2 0%	15 5%	53 2%
1998	9 3%	0 2%	0 3%	1 0%	0 0%	0 0%	0 6%	1 0%	1 6%	0 1%	2 1%	0 0%	1 7%	1 9%	80 2%
1999	0 6%	1 5%	0 0%	0 0%	0 0%	0 5%	0 3%	1 1%	5 7%	0 0%	7 6%	0 0%	0 3%	2 6%	79 8%
2000	5 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	7 5%	2 0%	0 0%	1 4%	0 6%	0 1%	1 9%	81 2%
2001	2 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	5 3%	5 3%	0 0%	2 5%	0 4%	1 4%	10 2%	72 8%
(90-98)	2 8%	0 1%	0 0%	0 5%	0 9%	3 2%	0 5%	8 0%	5 7%	1 4%	5 7%	2 5%	4 2%	14 0%	50 4%
(99-01)	2 6%	0 5%	0 0%	0 0%	0 0%	0 2%	0 1%	4 6%	4 3%	0 0%	3 8%	0 3%	0 6%	4 9%	77 9%

Appendix E.30. Percent distribution of Stillaguamish Fall Fingerling Chinook total fishing mortalities among fisheries and escapement.

										Other Fisheries					
Catch[1] Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	NCBC Net	NCBC Sport	WCVI Troll	Goodt Trol/Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1984	0 9%	0 0%	0 0%	3 7%	16 8%	1 9%	2 8%	10 3%	13 1%	19 6%	0 0%	0 0%	4 7%	26 2%	NA [2]
1985	7 0%	0 0%	0 0%	4 4%	0 0%	3 5%	0 0%	30 7%	8 8%	9 6%	8 8%	0 0%	8 8%	17 5%	NA [2]
1986	6 3%	0 0%	0 0%	0 0%	0 0%	4 2%	0 0%	31 3%	20 8%	0 0%	0 0%	0 0%	15 6%	21 9%	NA [2]
1990	0 7%	0 0%	0 0%	1 0%	7 8%	4 6%	0 0%	21 5%	10 5%	4 9%	6 1%	6 6%	8 8%	16 4%	11 0%
1991	0 2%	0 0%	0 0%	0 0%	0 0%	0 1%	0 5%	6 1%	4 7%	0 9%	2 4%	5 3%	6 2%	9 3%	64 2%
1992	0 0%	0 0%	0 0%	0 4%	0 0%	2 1%	0 0%	17 4%	5 1%	2 0%	3 6%	5 5%	10 3%	37 4%	16 3%
1993	0 0%	0 0%	0 0%	0 8%	0 5%	0 8%	1 3%	13 3%	9 7%	1 3%	8 9%	5 7%	1 3%	22 9%	33 5%
1994	2 9%	0 0%	0 0%	0 6%	0 0%	1 3%	0 0%	7 3%	8 6%	1 0%	5 6%	0 0%	2 3%	7 1%	63 2%
1995	2 4%	0 0%	0 0%	0 0%	0 0%	10 8%	0 0%	3 8%	4 4%	1 8%	9 0%	0 8%	2 2%	24 6%	40 1%
1996	1 1%	0 0%	0 0%	0 0%	0 0%	8 7%	2 1%	1 1%	6 3%	0 6%	6 9%	0 0%	0 2%	25 5%	47 5%
1997	9 8%	0 8%	0 0%	0 5%	0 0%	1 4%	1 2%	7 8%	5 1%	0 4%	4 9%	0 0%	1 8%	18 5%	47 8%
1998	10 3%	0 7%	0 4%	1 6%	0 0%	0 0%	0 8%	0 9%	1 7%	0 1%	2 3%	0 0%	1 7%	2 9%	76 5%
1999	0 7%	6 8%	0 0%	0 0%	0 0%	0 4%	0 3%	1 0%	6 4%	0 0%	7 6%	0 0%	0 3%	3 5%	73 0%
2000	6 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	7 7%	2 4%	0 0%	1 7%	0 6%	0 1%	3 1%	78 3%
2001	2 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	5 2%	5 2%	0 0%	2 6%	0 3%	1 3%	16 0%	67 3%
(90-98)	3 0%	0 2%	0 0%	0 5%	0 9%	3 3%	0 7%	8 8%	6 2%	1 4%	5 5%	2 7%	3 9%	18 3%	44 5%
(99-01)	3 0%	2 3%	0 0%	0 0%	0 0%	0 1%	0 1%	4 6%	4 7%	0 0%	4 0%	0 3%	0 6%	7 5%	72 9%

[1] No data are shown for 2002-2004 because of lack of coded-wire tagging of broods from 1999-2000

[2] Values represent estimates of catch or total fishing mortality distribution only for this year

Appendix E.31. Percent distribution of Nisqually Fall Fingerling Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Trl&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1983	0 0%	0 0%	0 0%	2 5%	0 0%	0 0%	0 0%	16 4%	12 4%	6 0%	0 0%	4 5%	10 9%	45 8%	NA [1]
1984	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	28 8%	1 5%	2 5%	0 0%	1 5%	37 9%	21 7%	NA [1]
1985	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	30 3%	0 0%	6 1%	3 0%	7 6%	31 8%	16 7%	NA [1]
1986	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	15 7%	13 0%	1 7%	0 0%	0 0%	35 7%	14 8%	19 1%
1987	0 0%	0 0%	0 0%	0 0%	2 0%	1 3%	0 0%	10 7%	13 3%	0 7%	0 0%	5 3%	35 3%	18 7%	12 7%
1988	0 0%	0 0%	0 0%	0 7%	2 2%	0 7%	2 2%	5 4%	17 7%	4 7%	0 0%	8 7%	17 3%	10 5%	30 0%
1989	0 0%	0 0%	0 0%	0 3%	0 0%	0 7%	0 0%	4 4%	2 5%	3 6%	6 3%	13 3%	42 6%	18 3%	8 0%
1990	0 0%	0 0%	0 0%	0 0%	0 2%	0 0%	0 0%	22 5%	3 1%	0 2%	5 8%	10 2%	37 7%	12 2%	8 2%
1991	0 0%	0 0%	0 0%	2 1%	0 0%	0 0%	0 0%	8 2%	3 3%	2 5%	2 1%	16 5%	23 0%	24 3%	18 1%
1992	0 0%	0 0%	0 0%	0 0%	0 0%	0 3%	0 8%	7 6%	2 9%	2 6%	4 2%	7 6%	18 2%	16 7%	39 3%
1993	0 0%	0 0%	0 0%	0 0%	0 0%	1 0%	0 0%	12 4%	3 9%	2 2%	1 8%	2 9%	22 4%	19 2%	34 3%
1994	0 0%	0 0%	0 0%	0 0%	0 0%	0 1%	0 0%	4 5%	2 4%	2 4%	0 5%	0 8%	22 0%	21 2%	46 2%
1995	0 0%	0 0%	0 0%	0 0%	0 0%	0 3%	0 3%	5 4%	1 7%	0 1%	3 1%	2 7%	32 3%	24 4%	29 6%
1996	0 2%	0 0%	0 0%	0 0%	0 0%	1 0%	0 0%	0 0%	3 3%	0 0%	1 1%	1 7%	42 0%	21 3%	29 4%
1997	0 0%	0 3%	0 0%	0 0%	0 0%	0 3%	0 6%	2 4%	0 6%	0 0%	4 5%	0 8%	18 9%	24 4%	47 0%
1998	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 4%	0 5%	1 5%	0 0%	0 7%	0 5%	36 4%	12 0%	47 9%
1999	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 4%	2 9%	0 0%	2 7%	2 8%	43 8%	19 6%	27 7%
2000	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	13 8%	3 0%	0 0%	2 8%	1 8%	46 4%	18 0%	14 2%
2001	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 1%	1 4%	0 0%	1 8%	4 3%	30 0%	16 1%	43 1%
2002	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	6 9%	1 0%	0 0%	3 7%	3 5%	41 9%	10 9%	32 2%
2003	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 4%	5 9%	1 1%	0 0%	1 4%	4 2%	43 2%	14 3%	29 4%
2004	0 0%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	5 8%	1 2%	0 0%	1 4%	6 6%	31 8%	8 6%	44 6%
2005	0 0%	0 0%	0 0%	0 0%	0 0%	0 3%	0 0%	5 7%	1 9%	0 0%	1 9%	3 7%	11 0%	7 8%	67 8%
(86-98)	0 0%	0 0%	0 0%	0 2%	0 3%	0 4%	0 3%	9 3%	4 9%	1 9%	2 4%	5 6%	29 7%	18 2%	26 7%
(99-05)	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 1%	5 9%	1 8%	0 0%	2 2%	3 8%	35 4%	13 6%	37 0%

[1] Values represent estimates of catch distribution only for this year

Appendix E.32. Percent distribution of Nisqually Fall Fingerling Chinook total fishing mortalities among fisheries and escapement.

										Other Fisheries				
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1983	0 0%	0 0%	0 0%	1 7%	0 0%	0 0%	0 0%	15 0%	8 8%	4 8%	0 0%	3 1%	9 2%	56 5%	NA [1]
1984	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	28 8%	1 3%	2 5%	0 0%	1 7%	35 2%	25 4%	NA [1]
1985	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	28 6%	0 0%	4 8%	3 6%	7 1%	31 0%	21 4%	NA [1]
1986	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	16 4%	12 5%	1 6%	0 0%	0 0%	32 8%	19 5%	17 2%
1987	0 0%	0 0%	0 0%	0 0%	2 7%	1 1%	0 0%	14 4%	11 8%	0 5%	0 0%	5 9%	29 9%	23 5%	10 2%
1988	0 0%	0 0%	0 0%	0 8%	2 1%	0 8%	2 6%	5 8%	18 6%	3 7%	0 0%	8 1%	16 0%	19 7%	21 8%
1989	0 0%	0 0%	0 0%	0 4%	0 0%	0 6%	0 0%	5 4%	3 0%	3 2%	6 0%	14 6%	40 4%	19 1%	7 2%
1990	0 0%	0 0%	0 0%	0 0%	0 2%	0 0%	0 0%	23 4%	3 2%	0 1%	5 9%	10 4%	35 6%	13 6%	7 6%
1991	0 0%	0 0%	0 0%	2 2%	0 0%	0 0%	0 0%	9 1%	3 6%	2 2%	1 8%	17 2%	21 2%	26 6%	16 1%
1992	0 0%	0 0%	0 0%	0 0%	0 0%	0 2%	1 0%	7 2%	2 9%	1 9%	3 7%	7 0%	18 4%	28 5%	29 3%
1993	0 0%	0 0%	0 0%	0 0%	0 0%	0 9%	0 0%	14 7%	4 5%	2 0%	1 7%	3 2%	21 6%	21 8%	29 6%
1994	0 0%	0 0%	0 0%	0 0%	0 0%	0 1%	0 0%	4 1%	2 3%	2 4%	0 4%	0 6%	17 8%	39 8%	32 3%
1995	0 0%	0 0%	0 0%	0 0%	0 0%	0 4%	0 4%	8 0%	2 0%	0 3%	3 0%	2 4%	30 2%	27 7%	25 8%
1996	0 2%	0 0%	0 0%	0 0%	0 0%	1 2%	0 0%	0 7%	3 6%	0 0%	1 2%	1 6%	38 9%	26 3%	26 4%
1997	0 0%	0 6%	0 0%	0 0%	0 0%	0 3%	0 8%	2 8%	0 7%	0 3%	4 3%	0 8%	17 4%	31 9%	40 2%
1998	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 5%	0 4%	1 5%	0 0%	0 7%	0 5%	31 6%	26 3%	38 3%
1999	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 4%	3 3%	0 0%	2 6%	3 1%	41 8%	24 1%	24 6%
2000	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	12 4%	2 8%	0 0%	2 8%	1 7%	37 9%	31 1%	11 3%
2001	0 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 9%	1 5%	0 0%	1 8%	4 5%	26 7%	26 8%	35 6%
2002	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	6 7%	1 2%	0 0%	4 1%	3 7%	39 9%	15 3%	29 0%
2003	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 5%	5 7%	1 4%	0 0%	1 6%	4 5%	41 2%	18 2%	26 8%
2004	0 0%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	5 8%	1 4%	0 0%	1 5%	7 2%	29 9%	13 6%	40 3%
2005	0 0%	0 0%	0 0%	0 0%	0 0%	0 3%	0 0%	5 7%	2 4%	0 0%	2 2%	4 3%	10 7%	13 3%	61 0%
(86-98)	0 0%	0 0%	0 0%	0 2%	0 4%	0 4%	0 4%	10 1%	5 0%	1 6%	2 3%	5 7%	27 3%	24 7%	21 8%
(99-05)	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 1%	5 7%	2 0%	0 0%	2 4%	4 1%	32 6%	20 3%	32 7%

[1] Values represent estimates of fishing mortality distribution only for this year

Appendix E.33. Percent distribution of George Adams Fall Fingerling Chinook among fisheries reported catch and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1982	0 0%	0 0%	0 0%	0 0%	0 5%	0 3%	0 0%	20 8%	4 4%	0 4%	0 0%	3 0%	38 1%	10 7%	21 9%
1983	0 0%	0 0%	0 0%	0 0%	1 6%	1 6%	0 0%	15 7%	3 5%	4 2%	0 5%	0 2%	29 8%	25 8%	17 2%
1984	0 0%	0 1%	0 0%	0 5%	3 2%	0 7%	0 4%	18 1%	5 7%	1 2%	0 0%	2 2%	31 3%	20 6%	15 9%
1989	0 0%	0 1%	0 0%	0 0%	0 0%	0 2%	0 0%	8 5%	3 8%	4 6%	1 7%	12 9%	38 7%	17 2%	12 2%
1990	0 1%	0 0%	0 0%	0 4%	0 3%	0 5%	0 0%	19 3%	4 7%	1 0%	5 0%	15 0%	28 4%	18 4%	6 8%
1991	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	18 4%	2 2%	0 4%	4 5%	8 6%	33 3%	18 0%	14 4%
1992	0 0%	0 0%	0 0%	0 0%	0 0%	0 5%	0 0%	15 6%	2 1%	5 2%	0 0%	20 3%	9 4%	39 6%	7 3%
1993	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	33 9%	4 3%	0 0%	7 8%	8 7%	4 3%	22 6%	18 3%
1994	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	7 0%	0 0%	0 0%	0 0%	14 0%	7 0%	72 1%
1995	0 0%	0 0%	0 0%	0 0%	0 0%	2 0%	0 0%	7 8%	3 9%	0 5%	3 9%	1 0%	4 4%	18 6%	57 8%
1996	0 0%	0 0%	0 0%	0 0%	0 0%	2 4%	0 0%	0 0%	12 6%	0 0%	4 7%	5 9%	0 0%	13 8%	60 6%
1997	1 9%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	4 2%	3 0%	0 3%	1 4%	3 0%	0 8%	18 8%	66 5%
1998	0 7%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 2%	0 7%	0 0%	1 1%	1 8%	1 8%	7 4%	86 2%
1999	0 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 8%	2 5%	0 0%	9 0%	4 9%	2 9%	10 9%	68 5%
2000	0 4%	0 0%	0 0%	0 3%	0 0%	0 1%	0 0%	19 8%	2 8%	0 0%	7 3%	3 6%	0 4%	18 3%	47 1%
2001	0 8%	0 0%	0 0%	0 0%	0 0%	0 0%	0 5%	11 8%	3 0%	0 0%	1 3%	6 4%	11 1%	10 0%	55 1%
2002	1 4%	0 0%	0 0%	0 9%	0 0%	0 0%	0 0%	10 8%	2 0%	0 0%	11 6%	4 0%	10 9%	14 7%	43 5%
2003	0 5%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	11 8%	2 3%	0 0%	1 7%	6 5%	10 6%	18 2%	48 3%
2004	0 5%	0 2%	0 0%	0 0%	0 0%	0 3%	0 0%	14 8%	1 9%	0 0%	3 1%	6 0%	11 5%	7 1%	54 6%
2005	0 3%	0 0%	0 0%	0 1%	0 0%	0 0%	0 7%	10 6%	4 7%	0 0%	8 6%	6 9%	5 7%	14 1%	48 2%
(82-84)	0 0%	0 0%	0 0%	0 2%	1 8%	0 9%	0 1%	18 2%	4 5%	1 9%	0 2%	1 8%	33 1%	19 0%	18 3%
(89-98)	0 3%	0 0%	0 0%	0 0%	0 0%	0 6%	0 0%	10 8%	4 4%	1 2%	3 0%	7 7%	13 5%	18 1%	40 2%
(99-05)	0 6%	0 0%	0 0%	0 2%	0 0%	0 1%	0 2%	11 5%	2 7%	0 0%	6 1%	5 5%	7 6%	13 3%	52 2%

Appendix E.34. Percent distribution of George Adams Fall Fingerling Chinook total fishing among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1982	0.0%	0.0%	0.0%	0.0%	0.6%	0.3%	0.0%	21.6%	4.3%	0.5%	0.0%	2.9%	36.7%	12.8%	20.3%
1983	0.0%	0.0%	0.0%	0.0%	1.2%	1.1%	0.0%	12.6%	2.4%	3.1%	0.3%	0.1%	25.7%	42.4%	11.0%
1984	0.0%	0.1%	0.0%	0.6%	3.2%	0.7%	0.5%	18.2%	5.6%	1.1%	0.0%	2.3%	30.6%	22.5%	14.6%
1989	0.0%	0.2%	0.0%	0.1%	0.1%	0.3%	0.0%	10.3%	4.0%	4.1%	1.8%	13.1%	35.8%	20.0%	10.4%
1990	0.8%	0.0%	0.0%	0.5%	0.4%	0.5%	0.0%	21.2%	4.9%	1.0%	4.6%	15.5%	25.9%	18.9%	5.9%
1991	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	19.4%	2.3%	0.4%	4.5%	8.7%	31.6%	19.7%	13.3%
1992	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	16.6%	1.8%	4.6%	0.0%	20.3%	8.3%	41.5%	6.5%
1993	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.6%	5.1%	0.0%	7.3%	8.0%	4.4%	26.3%	15.3%
1994	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.3%	0.0%	0.0%	0.0%	16.7%	10.4%	64.6%
1995	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	0.0%	9.7%	4.2%	1.2%	3.9%	0.8%	4.2%	28.2%	45.6%
1996	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	1.3%	14.3%	0.0%	4.6%	5.7%	0.0%	15.9%	55.5%
1997	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%	3.0%	0.8%	1.3%	3.0%	0.8%	24.2%	60.5%
1998	0.7%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.9%	0.0%	1.2%	1.7%	2.0%	26.8%	65.9%
1999	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	3.1%	0.0%	9.2%	5.8%	2.8%	14.3%	63.5%
2000	0.4%	0.0%	0.0%	0.2%	0.0%	0.2%	0.0%	19.2%	3.0%	0.0%	7.8%	3.7%	0.3%	24.3%	40.7%
2001	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	11.2%	3.4%	0.0%	1.3%	6.9%	10.6%	17.0%	48.1%
2002	1.7%	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	10.5%	2.4%	0.0%	13.0%	4.3%	10.4%	17.3%	39.3%
2003	0.6%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	11.5%	2.8%	0.0%	1.9%	6.9%	10.3%	21.7%	43.8%
2004	0.6%	0.8%	0.0%	0.0%	0.0%	0.6%	0.0%	14.6%	2.2%	0.0%	3.4%	6.5%	11.5%	11.3%	48.6%
2005	0.4%	0.0%	0.0%	0.2%	0.0%	0.0%	0.9%	10.0%	5.8%	0.0%	9.3%	7.6%	5.5%	16.7%	43.7%
(82-84)	0.0%	0.0%	0.0%	0.2%	1.7%	0.7%	0.2%	17.5%	4.1%	1.6%	0.1%	1.8%	31.0%	25.9%	15.3%
(89-98)	0.4%	0.1%	0.0%	0.1%	0.1%	0.6%	0.0%	11.7%	4.9%	1.2%	2.9%	7.7%	13.0%	23.2%	34.4%
(99-05)	0.7%	0.2%	0.0%	0.2%	0.0%	0.1%	0.2%	11.1%	3.2%	0.0%	6.6%	6.0%	7.3%	17.5%	46.8%

Appendix E.35. Percent distribution of South Puget Sound Fall Fingerling Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Gnslt Trl&Sp	Other Fisheries Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1982	0.3%	0.0%	0.1%	0.3%	1.5%	0.4%	0.1%	26.2%	11.3%	1.1%	0.0%	3.3%	28.4%	15.2%	11.8%
1983	0.3%	0.0%	0.0%	1.7%	1.1%	0.7%	0.0%	12.4%	5.7%	3.2%	0.0%	2.1%	31.3%	28.3%	13.1%
1984	0.0%	0.2%	0.0%	0.6%	1.2%	0.5%	0.3%	14.4%	8.7%	1.5%	0.2%	0.6%	15.6%	23.2%	33.1%
1985	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	14.8%	5.5%	2.3%	0.4%	1.2%	33.3%	15.1%	27.4%
1986	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	17.5%	6.0%	1.9%	0.0%	4.6%	6.3%	24.3%	38.0%
1987	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.8%	12.8%	3.5%	0.0%	7.2%	13.9%	10.9%	39.0%
1988	0.1%	0.0%	0.0%	0.3%	0.6%	0.7%	0.5%	5.9%	5.6%	3.4%	4.8%	8.1%	24.5%	14.4%	31.1%
1989	0.0%	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%	6.6%	4.7%	4.0%	1.1%	10.9%	19.0%	16.0%	37.2%
1990	0.0%	0.0%	0.0%	0.2%	0.1%	0.3%	0.0%	22.1%	3.5%	1.0%	3.5%	8.9%	22.9%	12.8%	24.5%
1991	0.4%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	16.3%	1.6%	1.3%	3.4%	10.5%	20.1%	13.8%	32.5%
1992	0.2%	0.1%	0.0%	0.0%	0.9%	0.5%	0.0%	17.4%	3.8%	2.6%	2.2%	9.2%	22.9%	18.0%	22.1%
1993	0.2%	0.1%	0.0%	0.0%	0.1%	0.6%	0.0%	15.7%	3.8%	2.2%	4.6%	5.5%	15.7%	21.0%	30.4%
1994	0.0%	0.0%	0.0%	0.5%	0.0%	0.2%	0.0%	8.9%	3.0%	4.1%	1.3%	0.7%	16.3%	10.0%	55.0%
1995	0.2%	0.0%	0.0%	0.1%	0.0%	0.9%	0.0%	3.7%	1.8%	0.2%	1.1%	1.3%	5.6%	11.7%	73.4%
1996	0.1%	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%	0.0%	4.1%	0.1%	1.8%	2.3%	6.3%	14.8%	69.4%
1997	0.5%	0.0%	0.0%	0.3%	0.0%	0.5%	0.0%	5.2%	1.8%	0.0%	1.3%	1.6%	2.3%	13.2%	72.5%
1998	1.3%	0.0%	0.0%	0.9%	0.0%	0.0%	0.2%	0.5%	1.7%	0.0%	0.8%	1.0%	8.0%	6.3%	79.3%
1999	0.5%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.7%	2.4%	0.0%	4.0%	3.0%	9.2%	5.3%	74.8%
2000	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.2%	1.8%	0.0%	3.4%	0.3%	12.3%	6.8%	65.9%
2001	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%	7.7%	3.2%	0.0%	2.3%	4.2%	11.6%	9.2%	61.4%
2002	0.7%	0.0%	0.0%	0.4%	0.0%	0.1%	0.4%	11.2%	4.0%	0.0%	3.5%	4.0%	18.3%	6.8%	50.4%
2003	0.6%	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	14.5%	3.9%	0.0%	2.9%	4.9%	14.4%	10.3%	47.6%
2004	0.4%	0.1%	0.0%	0.6%	0.0%	0.0%	0.2%	17.3%	2.0%	0.0%	4.4%	9.9%	14.6%	10.7%	40.0%
2005	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.3%	12.7%	2.9%	0.0%	4.6%	5.6%	6.0%	7.4%	60.0%
(82-84)	0.2%	0.1%	0.0%	0.9%	1.3%	0.5%	0.1%	17.7%	8.6%	1.9%	0.1%	2.0%	25.1%	22.2%	19.3%
(85-98)	0.2%	0.0%	0.0%	0.2%	0.1%	0.4%	0.1%	10.5%	4.3%	1.9%	1.9%	5.3%	15.6%	14.3%	45.1%
(99-05)	0.4%	0.0%	0.0%	0.3%	0.0%	0.0%	0.2%	10.5%	2.9%	0.0%	3.6%	4.6%	12.3%	8.1%	57.2%

Appendix E.36. Percent distribution of South Puget Sound Fall Fingerling Chinook total fishing mortalities among fisheries and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Geo&t Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1982	0 4%	0 0%	0 1%	0 4%	1 6%	0 4%	0 2%	27 4%	11 0%	1 0%	0 0%	3 3%	27 0%	16 4%	10 9%
1983	0 3%	0 0%	0 0%	1 6%	1 1%	0 7%	0 0%	11 9%	4 7%	2 7%	0 0%	2 0%	27 0%	38 3%	9 8%
1984	0 0%	0 2%	0 0%	0 6%	1 2%	0 4%	0 3%	14 7%	8 5%	1 4%	0 2%	0 7%	15 3%	26 1%	30 2%
1985	0 0%	0 0%	0 0%	0 0%	0 0%	0 1%	0 0%	14 8%	5 5%	2 2%	0 4%	1 1%	32 5%	17 7%	25 6%
1986	0 0%	0 0%	0 0%	0 0%	0 0%	1 4%	0 0%	17 8%	5 6%	1 9%	0 0%	4 6%	5 8%	30 2%	32 7%
1987	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	20 2%	10 6%	3 0%	0 0%	8 7%	12 2%	15 4%	29 8%
1988	0 4%	0 0%	0 0%	0 2%	1 0%	0 6%	0 5%	9 6%	7 3%	2 7%	4 0%	8 3%	21 6%	22 0%	21 8%
1989	0 1%	0 0%	0 0%	0 3%	0 2%	0 0%	0 0%	7 9%	5 4%	3 7%	1 1%	12 2%	18 3%	17 3%	33 6%
1990	0 0%	0 1%	0 0%	0 3%	0 2%	0 3%	0 0%	23 4%	3 6%	1 0%	3 5%	9 2%	21 5%	14 5%	22 4%
1991	0 5%	0 0%	0 0%	0 0%	0 2%	0 0%	0 0%	18 2%	1 8%	1 2%	3 4%	11 2%	18 9%	15 2%	29 5%
1992	0 3%	0 2%	0 0%	0 0%	1 0%	0 5%	0 0%	17 6%	3 9%	2 4%	2 1%	9 1%	20 3%	24 1%	18 4%
1993	0 3%	0 1%	0 0%	0 0%	0 1%	0 6%	0 0%	18 2%	4 5%	2 0%	4 3%	5 9%	14 7%	22 7%	26 5%
1994	0 0%	0 0%	0 0%	0 5%	0 0%	0 2%	0 0%	9 4%	3 3%	4 8%	1 3%	0 6%	15 5%	17 4%	46 9%
1995	0 2%	0 0%	0 0%	0 1%	0 0%	1 1%	0 0%	5 4%	2 1%	0 7%	1 2%	1 3%	5 8%	17 3%	64 9%
1996	0 2%	0 0%	0 0%	0 0%	0 0%	0 4%	0 2%	0 9%	4 8%	0 2%	1 8%	2 8%	6 3%	17 9%	64 5%
1997	0 5%	0 0%	0 0%	0 3%	0 0%	0 6%	0 0%	6 2%	2 0%	0 3%	1 5%	1 7%	2 8%	16 3%	67 7%
1998	1 4%	0 0%	0 0%	0 9%	0 0%	0 0%	0 3%	0 5%	1 8%	0 0%	0 8%	1 1%	8 0%	11 9%	73 2%
1999	0 6%	0 0%	0 0%	0 2%	0 0%	0 0%	0 0%	0 7%	3 0%	0 0%	4 3%	3 5%	9 3%	7 9%	70 6%
2000	0 4%	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	9 1%	2 0%	0 0%	3 7%	0 3%	12 0%	14 3%	58 0%
2001	0 1%	0 1%	0 0%	0 0%	0 0%	0 0%	0 3%	7 4%	3 8%	0 0%	2 4%	4 7%	11 1%	14 4%	55 6%
2002	0 9%	0 0%	0 0%	0 5%	0 0%	0 2%	0 4%	11 0%	5 1%	0 0%	3 9%	4 4%	17 5%	9 6%	46 5%
2003	0 7%	0 0%	0 0%	0 8%	0 0%	0 0%	0 0%	14 1%	4 7%	0 0%	3 3%	5 3%	13 8%	13 7%	43 7%
2004	0 4%	0 2%	0 0%	0 6%	0 0%	0 0%	0 2%	16 5%	2 3%	0 0%	4 7%	10 3%	13 5%	16 5%	34 7%
2005	0 0%	0 0%	0 0%	0 4%	0 0%	0 0%	0 4%	12 6%	3 6%	0 0%	5 2%	6 2%	5 9%	11 3%	54 4%
(82-84)	0 2%	0 1%	0 0%	0 9%	1 3%	0 5%	0 2%	18 0%	8 1%	1 7%	0 1%	2 0%	23 1%	26 9%	17 0%
(85-98)	0 3%	0 0%	0 0%	0 2%	0 2%	0 4%	0 1%	12 2%	4 4%	1 9%	1 8%	5 6%	14 6%	18 6%	39 8%
(99-05)	0 4%	0 1%	0 0%	0 4%	0 0%	0 0%	0 2%	10 2%	3 5%	0 0%	3 9%	5 0%	11 9%	12 5%	51 9%

Appendix E.37. Percent distribution of South Puget Sound Fall Yearling Chinook reported catch among fisheries and escapement.

Catch[1]										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Gen/St Trl/Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1982	0.0%	0.0%	0.0%	0.0%	2.5%	0.0%	0.0%	2.8%	3.2%	0.0%	0.0%	1.1%	14.5%	67.5%	8.5%
1983	0.0%	0.0%	0.0%	0.0%	1.8%	0.0%	0.0%	5.8%	0.5%	0.0%	0.0%	0.0%	9.8%	76.3%	5.8%
1984	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.3%	1.6%	0.0%	0.0%	0.0%	33.6%	43.3%	14.2%
1990	0.0%	0.0%	0.0%	0.0%	0.2%	0.1%	0.0%	0.3%	0.0%	0.5%	0.0%	1.4%	32.3%	54.7%	10.6%
1991	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.6%	0.7%	0.0%	0.0%	3.7%	12.8%	57.6%	19.6%
1992	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.6%	0.8%	0.0%	1.2%	4.6%	28.2%	48.7%	11.9%
1993	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	1.1%	0.0%	0.0%	1.4%	10.4%	57.7%	28.0%
1994	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.5%	2.2%	0.7%	0.0%	15.6%	63.3%	16.9%
1995	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.4%	2.6%	0.0%	2.0%	0.4%	10.4%	68.2%	10.0%
1996	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	0.0%	1.3%	0.7%	3.2%	89.3%	3.3%
1997	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	1.1%	0.0%	0.4%	1.3%	4.0%	66.6%	25.2%
1998	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.2%	5.6%	82.2%	10.0%
1999	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	15.0%	0.0%	0.0%	7.5%	2.5%	70.0%	5.0%
2000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	6.7%	12.0%	70.7%	6.7%
2001	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%	0.0%	0.0%	0.0%	3.0%	0.0%	74.6%	17.9%
2002	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	83.3%	16.7%
2004	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.1%	0.0%	0.0%	0.0%	0.7%	0.0%	10.7%	86.4%
2005	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	0.8%	19.3%	54.3%	24.0%
(82-84)	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	5.3%	1.8%	0.0%	0.0%	0.4%	19.3%	62.4%	9.5%
(90-98)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	0.9%	0.3%	0.6%	1.7%	13.6%	65.4%	15.1%
(99-05)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	2.1%	0.0%	0.8%	3.0%	5.6%	63.7%	23.8%

Appendix E.38. Percent distribution of South Puget Sound Fall Yearling Chinook for total fishing mortalities among fisheries and escapement.

Catch[1] Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GenSt Tr&Sp	Other Fisheries Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1982	0 0%	0 0%	0 0%	0 0%	2 2%	0 0%	0 0%	3 8%	2 7%	0 0%	0 0%	0 8%	12 7%	71 4%	6 5%
1983	0 0%	0 0%	0 0%	0 0%	1 8%	0 0%	0 0%	5 5%	0 4%	0 0%	0 0%	0 0%	8 8%	78 8%	4 7%
1984	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	7 0%	1 8%	0 0%	0 0%	0 0%	31 7%	46 5%	12 9%
1990	0 0%	0 0%	0 0%	0 0%	0 1%	0 1%	0 0%	0 8%	0 1%	0 4%	0 0%	1 6%	30 5%	56 9%	9 5%
1991	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	5 4%	0 6%	0 0%	0 0%	3 5%	11 4%	62 5%	16 5%
1992	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	4 9%	0 9%	0 0%	1 2%	4 8%	26 8%	51 2%	10 2%
1993	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 2%	1 0%	0 0%	0 0%	1 2%	6 7%	75 0%	15 0%
1994	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 0%	0 6%	2 3%	0 6%	0 0%	14 5%	67 0%	14 0%
1995	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	5 9%	2 0%	0 4%	1 6%	0 3%	8 2%	74 7%	6 9%
1996	0 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 1%	1 9%	0 0%	1 2%	0 6%	2 8%	90 0%	2 8%
1997	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 4%	1 0%	0 0%	0 3%	1 2%	3 4%	72 0%	20 6%
1998	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 7%	4 3%	86 1%	7 8%
1999	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	8 7%	0 0%	0 0%	3 8%	1 0%	84 6%	1 9%
2000	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	4 3%	6 5%	9 7%	74 2%	5 4%
2001	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 3%	0 0%	0 0%	0 0%	2 2%	0 0%	81 3%	13 2%
2002	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	89 5%	10 5%
2004	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 5%	0 0%	0 0%	0 0%	0 5%	1 5%	34 7%	61 7%
2005	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 6%	1 0%	16 4%	60 9%	20 1%
(82-84)	0 0%	0 0%	0 0%	0 0%	1 3%	0 0%	0 0%	5 4%	1 6%	0 0%	0 0%	0 3%	17 7%	65 6%	8 0%
(90-98)	0 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 3%	0 9%	0 3%	0 5%	1 7%	12 1%	70 6%	11 5%
(99-05)	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 7%	1 2%	0 0%	0 8%	2 2%	4 7%	73 0%	17 2%

[1] No data are shown for 2003 because of lack of coded-wire tagging of broods from 1998 and 2000, for both landed catch and total mortality

Appendix E.39. Percent distribution of Squaxin Pens Fall Yearling Chinook reported catch among fisheries and escapement.

Catch[1] Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement[2]
1990	0 0%	0 0%	0 0%	0 0%	0 0%	0 1%	0 0%	3 4%	0 7%	1 2%	0 6%	4 1%	33 5%	56 3%	NA[2]
1991	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	4 4%	1 6%	0 6%	0 0%	9 1%	34 0%	50 3%	NA[2]
1992	0 0%	0 0%	0 0%	0 0%	0 0%	0 4%	0 5%	2 4%	3 6%	1 3%	0 8%	7 5%	23 4%	60 0%	NA[2]
1993	0 0%	0 0%	0 0%	0 0%	0 0%	1 0%	0 0%	11 2%	6 2%	1 6%	2 7%	15 6%	3 9%	57 7%	NA[2]
1994	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	31 5%	7 5%	4 5%	6 0%	8 3%	28 6%	13 5%	NA[2]
1995	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	60 9%	39 1%	NA[2]
1996	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 9%	0 0%	0 0%	1 1%	4 8%	92 1%	NA[2]
1997	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 4%	0 0%	0 0%	0 0%	2 8%	8 0%	85 7%	NA[2]
1998	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 0%	3 0%	94 0%	NA[2]
1999	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	16 7%	0 0%	0 0%	0 0%	0 0%	0 0%	83 3%	NA[2]
(90-98)	0 0%	0 0%	0 0%	0 0%	0 0%	0 2%	0 1%	7 3%	2 2%	0 9%	1 0%	5 2%	20 0%	63 2%	NA[2]
(1999)	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	16 7%	0 0%	0 0%	0 0%	0 0%	0 0%	83 3%	NA[2]

[1] No data are shown for 2000-2003 because of lack of coded-wire tagging of broods from 1998-2000

[2] Values represent estimates of catch distribution only because escapement data is of insufficient quality

Appendix E.40. Percent distribution of Squaxin Pens Fall Yearling Chinook total fishing mortalities among fisheries and escapement.

Catch[1] Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement[2]
1990	0 0%	0 0%	0 0%	0 0%	0 0%	0 1%	0 0%	3 3%	0 8%	1 0%	0 6%	4 2%	32 2%	57 8%	NA[2]
1991	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	4 4%	1 7%	0 5%	0 0%	9 2%	31 8%	52 4%	NA[2]
1992	0 0%	0 0%	0 0%	0 0%	0 0%	0 3%	0 4%	2 1%	3 1%	0 9%	0 6%	6 2%	22 9%	63 4%	NA[2]
1993	0 0%	0 0%	0 0%	0 0%	0 0%	0 9%	0 0%	12 1%	6 7%	1 5%	2 3%	14 7%	4 1%	57 7%	NA[2]
1994	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	29 0%	7 2%	5 2%	6 0%	7 8%	25 7%	19 1%	NA[2]
1995[3]	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 4%	0 4%	0 0%	0 0%	0 0%	23 8%	75 4%	NA[2]
1996	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 8%	0 0%	0 0%	0 9%	5 3%	91 9%	NA[2]
1997	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 0%	0 0%	0 0%	0 0%	2 1%	6 4%	88 4%	NA[2]
1998	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 4%	2 4%	95 3%	NA[2]
1999[3]	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 0%	0 5%	0 0%	0 0%	1 0%	0 5%	95 9%	NA[2]
(90-98)	0 0%	0 0%	0 0%	0 0%	0 0%	0 1%	0 0%	5 6%	2 2%	0 9%	0 9%	4 9%	15 5%	69 7%	NA[2]
(1999)	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 0%	0 5%	0 0%	0 0%	1 0%	0 5%	95 9%	NA[2]

[1] No data are shown for 2000-2003 because of lack of coded-wire tagging of broods from 1998-2000

[2] Values represent estimates of catch distribution only because escapement data is of insufficient quality

[3] Relatively high age-2 survival, combined with relatively few total catch recoveries of CWTs, result in large estimates of sublegal CNR mortality in 1995 and 1999

Appendix E.41. Percent distribution of White River Spring Yearling Chinook reported catch among fisheries and escapement.

Catch[1] Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1982	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 4%	0 0%	0 0%	0 0%	73 2%	23 2%	NA[1]
1983	0 0%	0 0%	0 0%	0 0%	0 0%	1 6%	0 0%	4 3%	0 0%	0 0%	0 0%	1 6%	11 3%	59 7%	21 5%
1984	0 0%	0 0%	0 0%	0 0%	5 8%	0 0%	0 0%	4 5%	5 2%	0 0%	0 0%	2 6%	9 0%	25 2%	47 7%
1985	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 9%	2 2%	0 0%	30 8%	50 6%	13 5%
1986	0 0%	0 0%	0 0%	0 0%	0 4%	0 0%	0 0%	0 6%	2 4%	2 0%	0 0%	0 4%	15 3%	52 3%	26 8%
1987	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 5%	0 4%	0 0%	3 3%	11 3%	42 3%	41 2%
1988	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 2%	2 5%	0 2%	0 8%	1 3%	13 0%	48 4%	33 6%
1989	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 2%	1 2%	1 0%	0 0%	6 0%	13 6%	41 1%	35 8%
1990	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 9%	0 4%	0 6%	0 0%	5 2%	15 4%	44 6%	31 8%
1991	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 8%	1 3%	0 0%	1 3%	4 1%	10 8%	38 1%	43 6%
1992	0 0%	0 0%	0 0%	0 0%	0 0%	0 5%	0 0%	2 4%	1 9%	2 3%	0 8%	2 4%	7 8%	45 5%	36 2%
1993	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 7%	0 0%	0 0%	2 9%	3 6%	30 5%	62 4%
1994	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 8%	0 9%	0 0%	0 0%	1 4%	45 2%	50 7%
1995	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 5%	0 0%	0 0%	0 0%	0 8%	29 4%	69 3%
1996	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 9%	0 0%	0 0%	0 0%	0 3%	42 9%	55 9%
1997	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 7%	40 4%	55 8%
1998	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 6%	1 6%	27 0%	69 8%
1999	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 4%	2 4%	0 0%	0 0%	0 0%	0 0%	30 5%	64 6%
2000	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	4 7%	0 0%	0 0%	0 0%	0 0%	2 4%	37 6%	55 3%
(83-84)	0 0%	0 0%	0 0%	0 0%	2 9%	0 8%	0 0%	4 4%	2 6%	0 0%	0 0%	2 1%	10 2%	42 5%	34 6%
(85-98)	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 5%	1 1%	0 7%	0 4%	1 9%	9 2%	41 3%	44 7%
(99-00)	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 6%	1 2%	0 0%	0 0%	0 0%	1 2%	34 1%	60 0%

[1] No data are shown for 2001 to 2003 because of lack of coded-wire tagging of broods from 1998-2000

[2] Values represent estimates of catch distribution only for this year because escapement data is of insufficient quality

Appendix E.42. Percent distribution of White River Spring Yearling Chinook total fishing mortalities among fisheries and escapement.

										Other Fisheries					
Catch[1] Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Geo&St Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1982	0.0%	0.0%	0.0%	0.0%	0.9%	0.0%	0.0%	1.9%	1.9%	0.0%	0.0%	0.9%	59.8%	33.6%	NA[1]
1983	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	4.3%	0.0%	0.0%	0.0%	1.4%	10.4%	63.5%	19.0%
1984	0.0%	0.0%	0.0%	0.0%	4.8%	0.0%	0.0%	3.9%	4.4%	0.0%	0.0%	1.8%	7.0%	45.6%	32.5%
1985	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.5%	1.8%	0.0%	25.7%	60.3%	9.6%
1986	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.6%	2.3%	2.0%	0.0%	0.4%	14.1%	56.5%	23.6%
1987	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.4%	0.0%	2.5%	8.2%	61.9%	25.9%
1988	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	2.9%	0.2%	0.8%	1.4%	12.6%	52.3%	29.6%
1989	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	1.3%	1.0%	0.0%	6.3%	12.3%	46.5%	31.4%
1990	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	0.4%	0.6%	0.0%	5.5%	13.7%	50.6%	27.2%
1991	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	1.3%	0.0%	1.3%	4.1%	9.8%	46.0%	36.7%
1992	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	2.7%	2.1%	2.1%	0.7%	2.7%	7.5%	49.0%	32.9%
1993	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%	2.8%	3.1%	39.3%	54.2%
1994	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	0.8%	0.0%	0.0%	1.6%	52.4%	43.3%
1995	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%	0.0%	0.9%	41.3%	57.2%
1996	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.3%	48.5%	50.1%
1997	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	49.5%	47.0%
1998	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	1.4%	33.3%	63.8%
1999	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	1.9%	0.0%	0.0%	0.0%	0.0%	45.2%	51.0%
2000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.2%	0.0%	0.0%	0.0%	0.0%	2.1%	44.2%	49.5%
(83-84)	0.0%	0.0%	0.0%	0.0%	2.4%	0.7%	0.0%	4.1%	2.2%	0.0%	0.0%	1.6%	8.7%	54.6%	25.8%
(85-98)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	1.1%	0.7%	0.3%	1.9%	8.2%	49.1%	38.0%
(99-00)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.1%	1.0%	0.0%	0.0%	0.0%	1.1%	44.7%	50.3%

[1] No data are shown for 2001 to 2003 because of lack of coded-wire tagging of broods from 1998-2000

[2] Values represent estimates of total fishing mortality distribution only for this year because escapement data is of insufficient quality

Appendix E.43. Percent distribution of Hoko Fall Fingerling Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	NCBC Net	NCBC Sport	WCVI Troll	Gooth Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1989	4.8%	0.4%	0.0%	7.7%	0.4%	6.0%	0.0%	10.9%	1.6%	15.3%	0.0%	0.8%	0.8%	21.8%	29.4%
1990	15.8%	1.9%	0.5%	8.0%	0.7%	2.4%	0.0%	17.0%	0.8%	1.9%	0.0%	0.5%	1.0%	14.4%	35.1%
1991	15.2%	0.0%	0.0%	5.0%	1.1%	0.3%	0.6%	6.9%	0.4%	0.6%	0.5%	0.2%	1.0%	8.2%	59.8%
1992	7.7%	1.1%	1.2%	4.4%	1.2%	1.4%	0.7%	9.9%	0.5%	0.0%	2.1%	0.0%	0.2%	2.5%	67.1%
1993	6.6%	0.0%	2.0%	6.6%	0.0%	3.3%	0.0%	14.9%	0.3%	2.0%	0.0%	0.0%	0.3%	4.6%	59.4%
1994	13.6%	2.1%	2.4%	14.8%	0.6%	1.5%	0.0%	11.4%	2.1%	1.5%	2.1%	0.0%	0.0%	0.0%	47.9%
1995	12.5%	0.0%	4.1%	6.1%	0.0%	0.3%	0.8%	2.9%	0.8%	0.1%	0.0%	0.0%	0.0%	0.7%	71.6%
1996	10.5%	0.0%	3.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	85.3%
1997	13.9%	0.0%	0.0%	1.7%	0.2%	0.0%	0.6%	0.9%	0.0%	0.0%	0.6%	0.0%	0.0%	0.5%	81.7%
1998	9.0%	0.0%	0.4%	5.9%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.3%	0.0%	0.0%	0.0%	84.1%
1999	6.6%	0.0%	0.7%	4.3%	0.0%	0.0%	1.0%	0.0%	0.3%	0.0%	1.4%	0.0%	0.1%	0.0%	85.7%
2000	4.4%	0.2%	1.8%	0.6%	0.0%	0.0%	0.0%	0.2%	0.8%	0.0%	0.0%	0.6%	0.0%	0.0%	92.0%
2001	6.0%	0.0%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	0.0%	0.0%	0.0%	0.0%	0.4%	90.1%
2002	17.4%	0.0%	0.9%	3.7%	0.3%	0.0%	4.3%	1.5%	2.2%	0.0%	0.0%	0.0%	0.0%	1.2%	68.7%
2003	13.8%	0.1%	2.7%	3.0%	0.0%	0.0%	0.0%	0.0%	1.7%	0.0%	0.5%	0.0%	0.0%	0.0%	78.2%
2004	11.3%	0.0%	1.1%	8.4%	0.0%	0.0%	0.9%	0.6%	2.0%	0.0%	1.1%	0.0%	0.0%	0.8%	74.0%
(89-98)	11.3%	0.2%	1.2%	10.6%	0.0%	0.0%	4.8%	0.0%	5.0%	0.0%	1.2%	0.9%	0.0%	0.9%	64.1%
(99-05)	11.0%	0.6%	1.4%	6.0%	0.4%	1.5%	0.3%	7.5%	0.7%	2.1%	0.6%	0.2%	0.4%	5.3%	62.1%

Appendix E.44. Percent distribution of Hoko Fall Fingerling Chinook total fishing mortalities among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	NCBC Net	NCBC Sport	WCVI Troll	Gooth Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1989	11.8%	2.3%	0.3%	8.6%	1.1%	4.9%	0.0%	13.8%	1.7%	11.5%	0.0%	0.6%	0.6%	21.8%	21.0%
1990	18.5%	4.7%	0.6%	8.4%	0.9%	2.0%	0.0%	16.9%	0.7%	1.6%	0.0%	0.6%	0.9%	14.1%	30.1%
1991	18.8%	0.0%	0.1%	5.2%	1.1%	0.3%	0.5%	7.0%	0.4%	0.6%	0.4%	0.2%	1.0%	8.8%	55.5%
1992	8.8%	2.4%	1.6%	5.7%	1.1%	1.5%	0.8%	10.6%	0.6%	0.0%	2.1%	0.0%	0.2%	2.8%	61.9%
1993	12.4%	0.6%	2.3%	7.8%	0.0%	2.9%	0.0%	14.9%	0.6%	1.7%	0.0%	0.0%	0.3%	4.9%	51.7%
1994	20.8%	4.8%	2.8%	13.5%	0.5%	1.3%	0.0%	10.7%	2.0%	1.5%	1.8%	0.0%	0.0%	0.0%	40.4%
1995	16.3%	0.0%	4.7%	7.8%	0.0%	0.4%	1.0%	3.7%	0.8%	0.1%	0.0%	0.0%	0.0%	1.0%	64.3%
1996	14.0%	0.0%	4.4%	0.7%	0.0%	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	79.2%
1997	16.5%	0.0%	0.0%	1.8%	0.2%	0.0%	0.7%	1.1%	0.0%	0.1%	0.5%	0.0%	0.0%	0.4%	78.6%
1998	10.0%	0.0%	0.3%	6.4%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.3%	0.0%	0.0%	0.0%	82.8%
1999	7.9%	0.0%	0.7%	4.7%	0.0%	0.0%	1.1%	0.0%	0.3%	0.0%	1.5%	0.0%	0.1%	0.0%	83.7%
2000	6.0%	0.2%	2.9%	0.0%	0.0%	0.0%	0.0%	0.2%	1.0%	0.0%	0.0%	0.8%	0.0%	0.0%	89.0%
2001	8.7%	0.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.6%	85.8%
2002	19.7%	0.0%	1.0%	4.0%	0.3%	0.0%	5.1%	1.4%	2.8%	0.0%	0.0%	0.0%	0.0%	1.1%	64.7%
2003	15.1%	0.2%	2.9%	3.2%	0.0%	0.0%	0.0%	0.0%	2.0%	0.0%	0.6%	0.0%	0.0%	0.0%	75.9%
2004	12.8%	0.0%	1.1%	9.4%	0.0%	0.0%	1.2%	0.7%	2.4%	0.0%	1.2%	0.0%	0.0%	0.9%	70.3%
(89-98)	12.1%	0.2%	1.3%	11.3%	0.0%	0.0%	6.0%	0.0%	5.6%	0.0%	1.3%	0.8%	0.0%	1.1%	60.4%
(99-05)	14.8%	1.5%	1.7%	6.6%	0.5%	1.3%	0.3%	8.0%	0.7%	1.7%	0.5%	0.1%	0.3%	5.4%	56.6%

Appendix E.45. Percent distribution of Sooes Fall Fingerling Chinook reported catch among fisheries and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1989	7 0%	0 6%	0 0%	0 0%	0 0%	4 5%	0 0%	1 9%	0 0%	1 9%	8 3%	0 0%	0 0%	0 0%	75 8%
1990	9 9%	2 8%	4 3%	14 2%	1 4%	0 7%	0 0%	17 7%	7 1%	2 1%	0 0%	1 4%	0 0%	3 5%	34 8%
1991	11 9%	0 0%	0 0%	9 9%	0 0%	1 7%	0 0%	5 2%	0 0%	2 0%	0 0%	0 0%	0 0%	4 9%	64 3%
1992	8 5%	0 0%	0 0%	9 5%	2 0%	0 0%	0 0%	19 3%	1 0%	3 4%	1 7%	0 3%	0 0%	2 4%	51 9%
1993	4 6%	0 0%	0 0%	7 6%	2 1%	2 1%	2 1%	16 0%	0 0%	0 0%	0 0%	0 4%	0 0%	0 8%	64 1%
1994	17 0%	3 0%	4 0%	10 5%	1 0%	0 0%	1 0%	8 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	55 5%
1995	8 5%	0 0%	0 0%	4 6%	0 0%	0 7%	0 0%	9 8%	0 0%	0 0%	0 0%	0 0%	2 6%	0 0%	73 9%
1996	8 7%	0 0%	0 0%	0 0%	0 0%	0 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 5%	90 3%
1997	10 3%	0 0%	5 2%	5 5%	0 7%	0 3%	0 0%	0 0%	1 4%	0 0%	2 8%	1 0%	23 4%	0 0%	49 3%
1998	9 0%	0 0%	1 5%	17 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	72 0%
1999	12 3%	0 0%	12 3%	4 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 9%	0 0%	70 5%
2000	0 0%	0 0%	2 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	7 4%	0 0%	0 0%	0 0%	90 1%
2001	6 2%	0 0%	2 1%	0 0%	0 0%	0 0%	0 0%	0 0%	1 4%	0 0%	1 0%	0 0%	0 0%	0 0%	89 4%
2002	10 8%	0 2%	1 3%	1 7%	0 0%	0 0%	2 5%	0 6%	1 0%	0 0%	0 0%	0 0%	0 0%	0 8%	81 2%
2003	12 1%	0 1%	0 0%	4 6%	0 0%	0 0%	2 6%	0 0%	1 2%	0 0%	0 0%	0 0%	25 2%	1 3%	52 8%
2004	17 4%	0 5%	2 0%	14 5%	0 0%	0 0%	0 0%	0 8%	0 0%	0 0%	1 9%	0 0%	0 9%	0 9%	61 0%
2005	27 7%	0 0%	2 4%	24 3%	0 0%	0 0%	6 3%	1 0%	1 8%	0 0%	0 0%	0 8%	0 0%	2 0%	33 6%
(89-98)	9 5%	0 6%	1 5%	7 9%	0 7%	1 1%	0 3%	7 8%	1 0%	0 9%	1 3%	0 3%	2 6%	1 2%	63 2%
(99-05)	12 4%	0 1%	3 2%	7 0%	0 0%	0 0%	1 6%	0 3%	0 8%	0 0%	1 5%	0 1%	3 9%	0 7%	68 4%

Appendix E.46. Percent distribution of Sooes Fall Fingerling Chinook total fishing mortalities among fisheries and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1989	11 2%	2 1%	0 5%	3 2%	0 0%	3 7%	0 0%	4 8%	0 0%	2 1%	7 4%	0 0%	0 0%	1 6%	63 3%
1990	11 6%	7 0%	4 1%	16 3%	1 7%	0 6%	0 0%	17 4%	6 4%	1 7%	0 0%	1 7%	0 0%	2 9%	28 5%
1991	14 1%	0 0%	0 3%	10 6%	0 3%	1 6%	0 0%	7 2%	0 0%	1 9%	0 0%	0 0%	0 0%	5 1%	59 0%
1992	11 0%	0 3%	0 3%	10 7%	2 1%	0 0%	0 0%	20 4%	1 2%	3 0%	1 5%	0 3%	0 0%	2 4%	46 6%
1993	7 5%	0 4%	0 0%	7 9%	2 0%	2 0%	2 0%	16 9%	0 0%	0 0%	0 0%	0 4%	0 0%	1 2%	59 8%
1994	21 0%	7 4%	3 5%	9 6%	0 9%	0 0%	0 9%	7 4%	0 0%	0 0%	0 0%	0 0%	0 9%	0 0%	48 5%
1995	14 9%	0 0%	0 0%	6 1%	0 0%	1 1%	0 0%	12 7%	0 0%	0 6%	0 0%	0 0%	2 2%	0 0%	62 4%
1996	15 5%	0 0%	0 0%	0 9%	0 0%	0 4%	0 0%	0 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 4%	82 3%
1997	12 0%	0 0%	5 8%	5 8%	0 6%	0 3%	0 0%	0 0%	1 3%	0 3%	2 6%	1 0%	23 7%	0 0%	46 4%
1998	10 3%	0 0%	1 8%	19 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	68 7%
1999	13 5%	0 0%	13 5%	4 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 3%	0 0%	67 4%
2000	0 0%	0 0%	5 8%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	9 3%	0 0%	0 0%	0 0%	84 9%
2001	9 7%	0 0%	2 9%	0 0%	0 0%	0 0%	0 0%	0 0%	1 6%	0 0%	1 3%	0 0%	0 0%	0 0%	84 5%
2002	13 3%	0 4%	1 6%	2 0%	0 0%	0 0%	3 2%	0 5%	1 3%	0 0%	0 0%	0 0%	0 0%	0 7%	76 9%
2003	14 1%	0 4%	0 0%	5 2%	0 0%	0 0%	3 2%	0 0%	1 4%	0 0%	0 0%	0 0%	24 6%	1 4%	49 8%
2004	19 2%	1 4%	2 1%	15 7%	0 0%	0 0%	0 0%	0 7%	0 0%	0 0%	2 1%	0 0%	0 8%	1 0%	56 9%
2005	28 1%	0 0%	2 3%	24 8%	0 0%	0 0%	7 6%	1 0%	1 9%	0 0%	0 0%	0 8%	0 0%	1 9%	31 7%
(89-98)	12 9%	1 7%	1 6%	9 0%	0 8%	1 0%	0 3%	8 7%	0 9%	1 0%	1 2%	0 3%	2 7%	1 4%	56 6%
(99-05)	14 0%	0 3%	4 0%	7 4%	0 0%	0 0%	2 0%	0 3%	0 9%	0 0%	1 8%	0 1%	3 8%	0 7%	64 6%

Appendix E.47. Percent distribution of Queets Fall Fingerling Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Goodt Trol/Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1981	9 5%	0 0%	0 0%	13 7%	2 1%	2 1%	0 0%	11 6%	0 0%	1 1%	0 0%	1 1%	31 6%	3 2%	24 2%
1982	11 8%	2 4%	0 0%	22 9%	0 0%	0 8%	1 2%	12 2%	0 0%	0 0%	0 0%	0 0%	25 7%	0 0%	22 9%
1983	33 3%	0 0%	0 0%	6 8%	0 0%	0 8%	0 0%	7 6%	0 0%	2 3%	0 0%	0 8%	25 8%	0 0%	22 7%
1984	16 1%	0 7%	0 0%	19 6%	0 0%	0 0%	2 1%	7 7%	0 0%	0 0%	0 0%	2 1%	28 7%	0 0%	23 1%
1985	15 6%	0 0%	0 0%	31 6%	0 0%	0 0%	0 0%	2 0%	0 0%	1 6%	0 0%	0 0%	14 4%	1 2%	33 6%
1986	17 3%	0 0%	1 1%	11 6%	1 8%	0 0%	0 0%	7 0%	0 0%	1 1%	0 0%	0 0%	9 9%	0 0%	50 4%
1987	22 3%	0 2%	0 0%	11 7%	0 9%	0 6%	0 9%	0 7%	0 0%	0 0%	0 0%	0 6%	22 7%	0 6%	38 7%
1988	14 4%	0 8%	1 7%	7 8%	2 5%	0 4%	0 0%	4 0%	0 0%	0 0%	1 1%	0 0%	16 6%	3 3%	47 3%
1989	11 1%	0 0%	0 0%	9 1%	0 5%	0 2%	1 1%	7 6%	0 0%	0 0%	0 0%	0 0%	27 8%	1 6%	41 1%
1990	12 6%	0 0%	0 0%	5 5%	0 3%	0 3%	1 8%	6 6%	0 0%	0 0%	0 0%	0 0%	13 9%	0 0%	58 9%
1991	20 5%	0 2%	1 1%	9 7%	0 0%	0 0%	1 3%	4 8%	0 0%	0 0%	0 0%	0 0%	15 7%	0 5%	46 3%
1992	8 3%	0 8%	2 2%	7 7%	0 0%	0 2%	1 9%	17 5%	0 0%	0 0%	0 0%	0 0%	19 2%	0 8%	41 4%
1993	15 6%	0 0%	0 7%	14 1%	0 3%	0 0%	2 1%	12 1%	0 0%	0 0%	0 0%	0 5%	16 1%	2 8%	35 7%
1994	16 1%	0 3%	0 5%	21 7%	0 2%	0 4%	1 5%	4 1%	0 3%	0 0%	1 0%	0 0%	21 4%	0 0%	32 4%
1995	17 2%	0 0%	1 6%	6 0%	0 0%	0 1%	4 1%	0 7%	0 3%	0 0%	0 4%	0 7%	33 1%	0 0%	35 9%
1996	10 4%	0 0%	1 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	17 5%	0 6%	70 2%
1997	34 5%	0 3%	0 0%	6 0%	0 8%	0 0%	0 0%	0 2%	0 0%	0 0%	0 0%	0 0%	20 8%	0 0%	37 4%
1998	23 7%	0 0%	3 0%	19 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	12 1%	5 2%	37 0%
1999	9 3%	0 0%	1 4%	1 9%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	8 8%	0 3%	78 4%
2000	23 9%	0 0%	10 0%	10 7%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 9%	0 0%	51 5%
2001	23 7%	0 0%	5 9%	3 6%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 1%	42 4%	0 7%	22 6%
2002	26 3%	0 0%	3 4%	1 8%	0 0%	0 0%	2 3%	0 0%	0 3%	0 0%	0 0%	0 0%	25 7%	0 3%	40 0%
2003	21 0%	0 1%	3 6%	10 5%	0 0%	0 0%	4 1%	0 0%	0 0%	0 0%	0 3%	0 0%	21 6%	0 7%	38 0%
2004	23 2%	0 7%	4 7%	9 9%	0 0%	0 0%	11 0%	1 6%	0 0%	0 0%	0 0%	0 1%	18 2%	0 2%	30 4%
2005															[1]
(81-84)	17 7%	0 8%	0 0%	15 8%	0 5%	0 9%	0 8%	9 8%	0 0%	0 9%	0 0%	1 0%	28 0%	0 8%	23 2%
(85-98)	17 1%	0 2%	1 0%	11 5%	0 5%	0 2%	1 1%	4 8%	0 0%	0 2%	0 2%	0 1%	18 7%	1 2%	43 3%
(99-04)	21 2%	0 1%	4 8%	6 4%	0 0%	0 0%	2 9%	0 3%	0 1%	0 0%	0 1%	0 2%	20 1%	0 4%	43 5%

[1] 2005 not shown due to lack of reporting of escapement CWTs.

Appendix E.48. Percent distribution of Queets Fall Fingerling Chinook total fishing mortalities among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1981	12 9%	0 0%	0 0%	18 1%	1 7%	1 7%	0 0%	12 9%	0 0%	0 9%	0 0%	1 7%	26 7%	3 4%	19 8%
1982	14 2%	2 2%	0 0%	24 0%	0 0%	0 7%	1 1%	12 0%	0 0%	0 0%	0 0%	0 0%	24 7%	0 0%	21 0%
1983	50 5%	0 0%	0 0%	5 5%	0 0%	0 5%	0 0%	5 5%	0 0%	1 6%	0 0%	0 5%	19 2%	0 0%	16 5%
1984	20 9%	0 6%	0 0%	20 2%	0 0%	0 0%	2 5%	7 4%	0 0%	0 0%	0 0%	2 5%	25 8%	0 0%	20 2%
1985	20 2%	0 0%	0 0%	33 6%	0 0%	0 0%	0 0%	2 1%	0 0%	1 4%	0 0%	0 0%	12 3%	1 7%	28 8%
1986	26 8%	0 0%	1 2%	11 0%	1 5%	0 0%	0 0%	6 8%	0 0%	0 9%	0 0%	0 0%	9 2%	0 0%	42 6%
1987	28 7%	0 5%	0 0%	11 7%	0 8%	0 5%	1 0%	1 3%	0 0%	0 0%	0 0%	0 5%	20 2%	0 7%	34 2%
1988	17 4%	2 4%	1 6%	9 4%	2 4%	0 4%	0 1%	5 6%	0 0%	0 0%	1 0%	0 0%	14 9%	3 4%	41 5%
1989	17 0%	0 2%	0 2%	10 6%	0 6%	0 3%	1 1%	8 9%	0 0%	0 0%	0 0%	0 0%	24 3%	1 7%	35 3%
1990	15 5%	0 1%	0 1%	6 4%	0 3%	0 3%	1 9%	7 1%	0 0%	0 0%	0 0%	0 0%	13 3%	0 0%	54 9%
1991	24 5%	0 3%	1 2%	10 1%	0 0%	0 0%	1 4%	5 0%	0 0%	0 0%	0 0%	0 0%	14 6%	0 5%	42 5%
1992	15 4%	2 2%	2 4%	8 6%	0 0%	0 1%	1 8%	17 9%	0 0%	0 0%	0 0%	0 0%	16 2%	0 8%	34 4%
1993	20 0%	0 0%	0 7%	15 3%	0 3%	0 0%	2 0%	13 0%	0 0%	0 0%	0 0%	0 4%	14 3%	2 9%	31 1%
1994	24 8%	0 6%	0 4%	20 9%	0 2%	0 3%	1 5%	4 0%	0 2%	0 0%	1 0%	0 0%	18 4%	0 0%	27 6%
1995	21 9%	0 0%	1 8%	7 3%	0 0%	0 2%	5 0%	0 8%	0 2%	0 0%	0 4%	0 7%	29 8%	0 0%	31 9%
1996	18 9%	0 0%	1 5%	1 1%	0 0%	0 0%	0 0%	0 5%	0 0%	0 0%	0 0%	0 0%	15 8%	0 5%	61 8%
1997	38 5%	0 5%	0 0%	6 1%	0 7%	0 0%	0 0%	0 2%	0 0%	0 0%	0 0%	0 0%	19 5%	0 0%	34 6%
1998	25 6%	0 0%	3 1%	19 7%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	11 5%	5 3%	34 8%
1999	13 1%	0 0%	1 9%	2 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	8 5%	0 3%	74 1%
2000	27 9%	0 0%	12 5%	11 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 6%	0 0%	44 8%
2001	29 4%	0 0%	6 8%	4 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 2%	38 2%	0 6%	19 9%
2002	30 0%	0 0%	3 6%	1 9%	0 0%	0 0%	2 8%	0 0%	0 4%	0 0%	0 0%	0 0%	24 2%	0 3%	36 9%
2003	22 9%	0 1%	3 9%	11 2%	0 0%	0 0%	5 2%	0 0%	0 0%	0 0%	0 4%	0 0%	20 3%	0 7%	35 3%
2004	25 4%	2 0%	4 6%	10 1%	0 0%	0 0%	13 4%	1 5%	0 0%	0 0%	0 0%	0 1%	16 1%	0 2%	26 6%
2005															[1]
(81-84)	24 6%	0 7%	0 0%	17 0%	0 4%	0 7%	0 9%	9 5%	0 0%	0 6%	0 0%	1 2%	24 1%	0 9%	19 4%
(85-98)	22 5%	0 5%	1 0%	12 3%	0 5%	0 2%	1 1%	5 2%	0 0%	0 2%	0 2%	0 1%	16 7%	1 3%	38 3%
(99-04)	24 8%	0 4%	5 6%	6 7%	0 0%	0 0%	3 6%	0 3%	0 1%	0 0%	0 1%	0 2%	18 5%	0 4%	39 6%

[1] 2005 not shown due to lack of reporting of escapement CWTs.

Appendix E.49. Percent distribution of Willamette Spring Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1980	6 5%	0 9%	0 3%	11 0%	0 3%	0 8%	0 1%	4 7%	0 0%	0 1%	0 0%	0 9%	0 6%	15 8%	57 9%
1981	8 7%	1 1%	0 2%	12 0%	0 8%	0 2%	0 0%	2 7%	0 0%	0 0%	0 0%	0 7%	3 1%	18 4%	52 2%
1982	4 1%	1 1%	0 1%	6 6%	0 1%	0 3%	0 1%	4 1%	0 0%	0 0%	0 0%	1 1%	7 3%	24 9%	50 1%
1983	12 8%	0 1%	0 0%	12 0%	0 3%	0 0%	0 0%	1 9%	0 8%	0 0%	0 0%	1 9%	6 5%	21 2%	42 6%
1984	4 0%	0 3%	0 3%	2 1%	0 1%	0 1%	0 1%	1 9%	0 1%	0 0%	0 0%	1 0%	6 2%	23 9%	59 8%
1985	5 1%	0 1%	0 0%	0 5%	0 2%	0 0%	0 0%	0 5%	0 0%	0 0%	0 0%	0 3%	18 3%	20 5%	54 6%
1986	3 1%	0 4%	0 0%	6 6%	0 6%	2 5%	0 0%	5 5%	0 0%	0 0%	0 6%	0 0%	9 2%	17 1%	54 4%
1987	9 8%	0 0%	0 6%	13 3%	0 8%	1 1%	0 0%	0 9%	0 0%	0 0%	1 3%	2 4%	6 3%	27 0%	36 5%
1988	8 6%	0 2%	0 4%	6 2%	0 6%	0 1%	0 0%	3 1%	0 0%	0 0%	0 0%	2 2%	6 9%	28 8%	42 9%
1989	4 4%	0 0%	0 2%	1 8%	0 0%	0 1%	0 0%	1 4%	0 5%	0 2%	0 5%	1 5%	12 6%	20 3%	56 6%
1990	6 3%	0 3%	0 2%	1 4%	0 2%	0 5%	0 2%	2 1%	0 0%	0 1%	0 7%	1 3%	17 0%	27 7%	42 0%
1991	3 1%	0 6%	0 6%	1 7%	0 0%	0 2%	0 0%	0 4%	0 2%	0 0%	0 2%	0 7%	6 0%	43 0%	43 3%
1992	3 6%	0 3%	0 2%	1 7%	0 0%	0 2%	0 2%	2 7%	0 0%	0 1%	0 2%	2 4%	5 9%	31 7%	51 0%
1993	8 1%	0 0%	0 0%	1 3%	0 0%	0 0%	0 1%	1 4%	0 0%	0 0%	0 2%	1 5%	0 8%	43 1%	43 5%
1994	4 1%	0 3%	0 9%	0 7%	0 2%	0 2%	0 1%	0 6%	0 0%	0 0%	0 0%	0 2%	5 1%	38 8%	48 7%
1995	2 8%	0 1%	0 3%	1 0%	0 0%	0 3%	0 0%	0 3%	0 0%	0 0%	0 1%	0 0%	0 3%	43 8%	50 9%
1996	2 2%	0 0%	0 0%	0 0%	0 0%	0 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 1%	1 2%	7 9%	88 6%
1997	3 6%	0 0%	0 0%	0 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 3%	0 8%	15 8%	79 0%
1998	4 2%	0 1%	0 2%	0 0%	0 0%	0 0%	0 0%	0 1%	0 0%	0 0%	0 0%	0 1%	0 4%	16 4%	78 5%
1999	4 3%	0 0%	0 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 6%	0 0%	0 8%	14 7%	79 3%
2000	7 8%	0 1%	0 4%	0 1%	0 0%	0 0%	0 7%	0 3%	0 0%	0 0%	0 3%	0 3%	2 3%	29 7%	58 0%
2001	1 4%	0 0%	0 1%	0 1%	0 0%	0 0%	0 1%	0 4%	0 0%	0 0%	0 0%	0 3%	3 5%	23 2%	70 9%
2002	1 9%	0 1%	0 1%	0 7%	0 0%	0 0%	0 0%	0 7%	0 0%	0 0%	0 1%	0 8%	14 4%	20 7%	60 6%
2003	4 8%	0 0%	0 1%	0 4%	0 0%	0 0%	0 2%	2 4%	0 0%	0 0%	0 1%	0 3%	1 5%	15 8%	74 6%
2004	3 0%	0 3%	0 1%	0 5%	0 0%	0 0%	0 0%	5 8%	0 0%	0 0%	0 0%	1 6%	6 3%	17 4%	65 0%
2005	3 0%	0 0%	0 1%	0 3%	0 0%	0 0%	0 3%	6 2%	0 0%	0 0%	0 0%	1 0%	5 6%	14 9%	68 5%
(80-84)	7 2%	0 7%	0 2%	8 7%	0 3%	0 3%	0 1%	3 1%	0 2%	0 0%	0 0%	1 1%	4 7%	20 8%	52 5%
(85-98)	4 9%	0 2%	0 3%	2 6%	0 2%	0 4%	0 0%	1 4%	0 1%	0 0%	0 3%	0 9%	6 5%	27 3%	55 0%
(99-05)	3 7%	0 1%	0 2%	0 3%	0 0%	0 0%	0 2%	2 3%	0 0%	0 0%	0 2%	0 6%	4 9%	19 5%	68 1%

Appendix E.50. Percent distribution of Willamette Spring Chinook total fishing mortalities among fisheries and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1980	8 7%	0 9%	0 3%	14 2%	0 4%	0 8%	0 1%	5 8%	0 0%	0 1%	0 0%	1 1%	0 7%	15 2%	51 5%
1981	10 7%	1 1%	0 3%	14 8%	0 9%	0 2%	0 0%	3 3%	0 0%	0 0%	0 0%	0 8%	3 0%	17 8%	47 0%
1982	5 8%	1 2%	0 2%	8 2%	0 1%	0 4%	0 1%	5 1%	0 0%	0 0%	0 0%	1 3%	7 0%	24 8%	45 9%
1983	19 0%	0 1%	0 0%	13 3%	0 3%	0 0%	0 0%	2 0%	0 8%	0 0%	0 0%	2 1%	5 9%	19 9%	36 7%
1984	4 6%	0 3%	0 4%	2 5%	0 1%	0 1%	0 1%	2 1%	0 1%	0 0%	0 0%	1 2%	6 3%	24 7%	57 6%
1985	7 9%	0 3%	0 0%	0 5%	0 2%	0 0%	0 0%	0 6%	0 0%	0 0%	0 0%	0 3%	17 7%	20 8%	51 8%
1986	4 9%	1 2%	0 0%	7 5%	0 7%	2 6%	0 0%	6 2%	0 0%	0 0%	0 7%	0 0%	8 8%	17 1%	50 3%
1987	18 8%	0 0%	1 0%	15 4%	1 2%	1 0%	0 0%	1 5%	0 0%	0 0%	1 2%	3 1%	5 3%	23 1%	28 4%
1988	11 5%	0 4%	0 6%	7 8%	0 8%	0 0%	0 0%	3 7%	0 0%	0 0%	0 0%	2 4%	6 5%	30 3%	36 0%
1989	5 7%	0 0%	0 2%	2 2%	0 0%	0 1%	0 0%	1 6%	0 6%	0 1%	0 6%	1 7%	12 2%	22 1%	52 8%
1990	10 3%	0 8%	0 3%	2 0%	0 2%	0 5%	0 2%	2 7%	0 0%	0 1%	0 7%	1 5%	15 6%	28 0%	37 3%
1991	4 2%	1 5%	0 7%	2 1%	0 0%	0 2%	0 0%	0 4%	0 2%	0 0%	0 2%	0 7%	5 7%	44 9%	39 1%
1992	7 9%	0 7%	0 3%	2 1%	0 0%	0 1%	0 2%	3 2%	0 0%	0 1%	0 3%	2 8%	5 4%	32 3%	44 6%
1993	13 4%	0 0%	0 0%	1 5%	0 0%	0 0%	0 1%	1 6%	0 0%	0 0%	0 2%	1 6%	0 7%	43 9%	36 9%
1994	5 8%	0 7%	1 1%	0 9%	0 3%	0 2%	0 1%	0 8%	0 0%	0 0%	0 0%	0 2%	4 8%	40 7%	44 4%
1995	5 3%	0 1%	0 4%	1 4%	0 0%	0 4%	0 0%	0 5%	0 0%	0 0%	0 1%	0 0%	0 3%	46 0%	45 5%
1996	3 4%	0 0%	0 0%	0 2%	0 0%	0 3%	0 0%	0 1%	0 0%	0 0%	0 0%	0 1%	1 2%	8 9%	85 9%
1997	4 5%	0 0%	0 0%	0 7%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 4%	0 8%	17 2%	76 4%
1998	5 7%	0 4%	0 3%	0 0%	0 0%	0 0%	0 0%	0 1%	0 0%	0 0%	0 0%	0 2%	0 4%	18 5%	74 4%
1999	9 2%	0 0%	1 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 9%	0 0%	0 8%	16 0%	72 2%
2000	13 7%	0 2%	0 9%	0 1%	0 0%	0 0%	0 9%	0 3%	0 0%	0 0%	0 3%	0 3%	2 1%	31 6%	49 4%
2001	1 6%	0 1%	0 1%	0 1%	0 0%	0 0%	0 2%	0 4%	0 0%	0 0%	0 0%	0 3%	3 7%	26 9%	66 6%
2002	2 3%	0 3%	0 1%	0 7%	0 0%	0 0%	0 0%	0 7%	0 0%	0 0%	0 1%	0 9%	14 0%	22 9%	58 0%
2003	6 0%	0 0%	0 1%	0 5%	0 0%	0 0%	0 2%	2 5%	0 0%	0 0%	0 1%	0 3%	1 5%	17 2%	71 6%
2004	4 0%	1 1%	0 1%	0 7%	0 0%	0 0%	0 0%	5 7%	0 0%	0 0%	0 0%	1 8%	6 2%	19 2%	61 1%
2005	3 6%	0 0%	0 2%	0 4%	0 0%	0 0%	0 5%	6 6%	0 0%	0 0%	0 0%	1 2%	5 6%	16 3%	65 7%
(80-84)	9 8%	0 7%	0 2%	10 6%	0 4%	0 3%	0 1%	3 7%	0 2%	0 0%	0 0%	1 3%	4 6%	20 5%	47 7%
(85-98)	7 8%	0 4%	0 4%	3 2%	0 2%	0 4%	0 0%	1 6%	0 1%	0 0%	0 3%	1 1%	6 1%	28 1%	50 3%
(99-05)	5 8%	0 2%	0 4%	0 4%	0 0%	0 0%	0 3%	2 3%	0 0%	0 0%	0 2%	0 7%	4 8%	21 4%	63 5%

Appendix E.51. Percent distribution of Columbia Summer Chinook reported catch among fisheries and escapement.

										Other Fisheries				
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Geo&St Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1979	11 4%	0 0%	1 2%	7 2%	2 4%	9 6%	0 0%	16 3%	7 8%	1 8%	0 0%	0 0%	4 8%	4 8%	32 5%
1980	33 1%	0 0%	0 9%	8 8%	4 0%	1 2%	0 0%	16 7%	0 0%	0 0%	0 0%	1 5%	0 6%	0 0%	33 1%
1987	13 6%	0 0%	0 0%	5 6%	4 8%	4 0%	3 2%	0 0%	0 0%	0 0%	0 0%	20 0%	15 2%	0 0%	33 6%
1988	1 1%	0 8%	0 0%	7 6%	0 0%	7 6%	1 9%	15 9%	0 0%	1 5%	4 2%	3 4%	15 2%	3 0%	37 9%
1989	4 8%	0 5%	0 6%	5 1%	0 6%	0 3%	0 6%	14 8%	1 4%	2 2%	2 4%	14 4%	8 5%	2 6%	41 1%
1990	9 7%	0 0%	0 0%	6 6%	1 1%	1 3%	0 0%	19 5%	0 6%	0 4%	0 0%	5 7%	10 8%	2 5%	41 8%
1991	3 9%	0 0%	0 0%	2 2%	0 5%	1 6%	0 0%	5 7%	0 0%	1 1%	0 7%	3 4%	3 9%	2 2%	74 7%
1992	14 1%	0 0%	0 0%	3 4%	2 1%	1 0%	0 0%	14 8%	0 7%	0 0%	0 0%	6 5%	1 4%	1 4%	54 6%
1993	7 1%	0 0%	0 0%	1 4%	0 0%	2 4%	0 0%	14 3%	0 0%	0 0%	1 9%	5 2%	3 3%	1 4%	62 9%
1994	13 5%	0 0%	0 0%	0 0%	0 0%	0 0%	13 5%	0 0%	0 0%	0 0%	0 0%	0 0%	10 8%	0 0%	62 2%
1995	2 9%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	5 1%	0 0%	0 0%	0 0%	2 2%	1 4%	0 0%	88 4%
1996	13 3%	0 3%	0 0%	0 0%	0 0%	2 8%	0 0%	0 0%	2 2%	0 0%	0 0%	2 8%	3 9%	4 2%	70 6%
1997	7 7%	0 1%	3 2%	0 2%	0 0%	0 4%	1 3%	1 6%	0 0%	0 0%	0 0%	2 9%	1 2%	0 8%	80 6%
1998	8 5%	0 1%	0 9%	0 5%	0 0%	0 1%	1 3%	0 0%	0 0%	0 0%	0 5%	1 8%	5 0%	1 0%	80 3%
1999	10 1%	2 6%	1 8%	0 4%	0 0%	0 6%	2 6%	0 6%	0 0%	0 0%	5 0%	8 5%	1 2%	3 4%	63 3%
2000	21 7%	1 4%	2 6%	0 4%	0 0%	0 0%	2 1%	4 5%	0 6%	0 0%	3 9%	3 1%	1 1%	3 9%	54 6%
2001	14 2%	2 8%	1 5%	0 5%	0 0%	0 0%	3 5%	12 4%	0 2%	0 0%	1 9%	17 7%	0 8%	6 3%	38 4%
2002	22 2%	0 0%	1 4%	10 4%	0 0%	0 0%	1 9%	15 4%	0 1%	0 0%	1 4%	8 7%	1 4%	5 9%	31 1%
2003	26 4%	0 4%	1 1%	11 2%	0 0%	0 0%	1 9%	12 4%	0 1%	0 0%	0 2%	6 6%	3 0%	6 9%	29 7%
2004	13 3%	0 3%	1 1%	5 0%	0 0%	0 0%	1 5%	11 5%	0 2%	0 0%	1 5%	10 5%	7 9%	16 0%	31 3%
2005	12 1%	0 0%	1 0%	7 7%	0 0%	0 0%	2 2%	14 9%	0 0%	0 0%	1 1%	8 7%	7 6%	11 3%	33 4%
(79-80)	22 3%	0 0%	1 1%	8 0%	3 2%	5 4%	0 0%	16 5%	3 9%	0 9%	0 0%	0 8%	2 7%	2 4%	32 8%
(87-98)	8 4%	0 2%	0 4%	2 7%	0 8%	1 8%	1 8%	7 6%	0 4%	0 4%	0 8%	5 7%	6 7%	1 6%	60 7%
(99-05)	17 1%	1 1%	1 5%	5 1%	0 0%	0 1%	2 2%	10 2%	0 2%	0 0%	2 1%	9 1%	3 3%	7 7%	40 3%

Appendix E.52. Percent distribution of Columbia Summer Chinook total fishing mortalities among fisheries and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	NCBC Net	NCBC Sport	WCVI Troll	Gault Troll/Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1979	14.4%	0.0%	1.0%	9.0%	4.0%	8.5%	0.0%	18.9%	7.0%	1.5%	0.0%	0.5%	4.0%	4.5%	26.9%
1980	32.8%	0.0%	0.9%	9.2%	4.3%	1.1%	0.0%	18.1%	0.0%	0.0%	0.0%	1.7%	0.6%	0.0%	31.3%
1987	16.0%	0.0%	0.0%	8.0%	3.7%	4.3%	2.5%	7.4%	0.0%	0.0%	0.0%	19.8%	11.7%	0.6%	25.9%
1988	1.9%	2.2%	0.0%	10.0%	0.0%	7.5%	1.9%	20.9%	0.0%	1.2%	4.0%	3.4%	13.1%	2.8%	31.2%
1989	7.1%	2.1%	0.7%	5.6%	0.7%	0.3%	0.6%	16.4%	1.4%	1.9%	2.4%	14.9%	7.5%	2.5%	35.9%
1990	10.6%	0.0%	0.0%	7.6%	1.1%	1.3%	0.0%	20.3%	0.6%	0.3%	0.0%	5.7%	10.3%	2.6%	39.5%
1991	4.1%	0.0%	0.0%	2.3%	0.5%	1.7%	0.0%	6.3%	0.0%	1.1%	0.7%	3.6%	4.0%	2.3%	73.4%
1992	18.5%	0.0%	0.0%	3.4%	1.9%	0.9%	0.0%	15.4%	0.6%	0.0%	0.0%	6.6%	1.3%	1.6%	49.8%
1993	7.8%	0.0%	0.0%	1.4%	0.0%	2.8%	0.0%	15.6%	0.0%	0.0%	1.8%	5.5%	3.2%	1.4%	60.6%
1994	17.5%	0.0%	0.0%	0.0%	0.0%	0.0%	15.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0%	0.0%	57.5%
1995	4.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.4%	0.0%	1.4%	0.0%	2.0%	2.7%	0.0%	82.4%
1996	21.3%	0.7%	0.0%	1.8%	0.0%	3.0%	0.0%	2.7%	2.5%	0.2%	0.0%	2.5%	3.2%	3.9%	58.1%
1997	8.8%	0.1%	3.6%	0.2%	0.0%	0.4%	1.9%	1.8%	0.0%	0.0%	0.0%	3.3%	1.1%	0.9%	77.8%
1998	10.1%	0.5%	1.1%	0.5%	0.0%	0.1%	1.8%	0.0%	0.0%	0.0%	0.6%	2.1%	4.9%	1.0%	77.3%
1999	13.6%	5.0%	3.0%	0.3%	0.0%	0.6%	3.7%	0.5%	0.0%	0.0%	5.2%	9.1%	1.0%	3.3%	54.5%
2000	25.8%	2.3%	3.4%	0.4%	0.0%	0.0%	2.7%	4.2%	0.7%	0.1%	4.1%	3.3%	1.0%	3.9%	48.0%
2001	16.4%	5.9%	1.5%	0.5%	0.0%	0.0%	3.9%	11.2%	0.2%	0.0%	1.9%	17.6%	0.7%	6.5%	33.8%
2002	23.4%	0.1%	1.5%	10.6%	0.0%	0.0%	2.4%	15.2%	0.1%	0.0%	1.6%	8.9%	1.3%	6.0%	28.9%
2003	27.7%	1.7%	1.1%	11.7%	0.0%	0.0%	2.2%	11.8%	0.1%	0.0%	0.3%	6.8%	2.8%	6.8%	27.0%
2004	14.5%	0.7%	1.1%	5.3%	0.0%	0.0%	1.9%	11.0%	0.2%	0.0%	1.6%	10.7%	7.5%	16.3%	29.2%
2005	12.4%	0.1%	1.0%	7.7%	0.0%	0.0%	2.6%	14.6%	0.0%	0.0%	1.3%	8.7%	7.4%	11.7%	32.3%
(79-80)	23.6%	0.0%	1.0%	9.1%	4.2%	4.8%	0.0%	18.5%	3.5%	0.8%	0.0%	1.1%	2.3%	2.3%	29.1%
(87-98)	10.7%	0.5%	0.5%	3.4%	0.7%	1.9%	2.0%	9.5%	0.4%	0.5%	0.8%	5.8%	6.1%	1.6%	55.8%
(99-05)	19.1%	2.3%	1.8%	5.2%	0.0%	0.1%	2.8%	9.8%	0.2%	0.0%	2.3%	9.3%	3.1%	7.8%	36.2%

Appendix E.53. Percent distribution of Cowlitz Tule Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Geo$t Trl&Sp	Other Fisheries					Escapement
										Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	
1981	5 6%	0 0%	0 0%	2 4%	0 0%	1 3%	6 5%	16 1%	0 0%	2 4%	0 0%	9 7%	15 1%	12 9%	28 0%
1982	3 7%	0 0%	0 2%	1 4%	0 5%	2 1%	0 0%	14 5%	0 0%	1 2%	0 9%	18 5%	9 7%	12 5%	34 9%
1983	3 7%	0 0%	0 0%	6 7%	3 7%	0 5%	0 0%	17 8%	0 4%	0 5%	0 0%	6 9%	4 8%	18 7%	36 2%
1984	4 4%	0 0%	0 0%	7 2%	2 1%	0 1%	0 8%	24 5%	0 0%	1 7%	0 0%	4 4%	15 1%	3 6%	36 0%
1985	3 7%	0 3%	0 0%	4 0%	0 0%	4 4%	0 0%	11 4%	0 4%	1 2%	0 0%	4 4%	6 5%	13 7%	49 9%
1986	0 4%	0 1%	0 0%	0 2%	0 6%	0 8%	0 0%	12 6%	0 4%	1 1%	0 0%	13 0%	31 0%	12 4%	27 4%
1987	3 7%	0 3%	0 0%	3 9%	1 2%	0 0%	0 0%	9 7%	0 0%	0 8%	1 0%	11 4%	22 9%	16 1%	29 0%
1988	1 7%	0 3%	0 0%	1 9%	0 0%	0 1%	0 0%	15 9%	0 0%	0 6%	0 0%	15 5%	24 0%	12 3%	27 7%
1989	3 3%	0 0%	0 7%	4 5%	0 0%	0 3%	0 0%	6 6%	0 0%	1 0%	0 0%	17 8%	7 1%	10 6%	48 1%
1990	4 4%	0 0%	0 0%	1 8%	2 9%	2 6%	0 0%	14 2%	0 0%	0 7%	0 0%	9 5%	0 0%	12 0%	51 8%
1991	9 7%	0 0%	0 0%	3 2%	1 6%	0 0%	0 0%	5 6%	0 0%	0 0%	3 2%	10 5%	11 3%	9 7%	45 2%
1992	2 2%	0 0%	0 0%	0 0%	2 2%	0 0%	1 6%	17 7%	0 0%	0 0%	0 0%	7 0%	5 4%	4 8%	59 1%
1993	3 4%	0 0%	0 0%	2 5%	0 0%	0 9%	0 0%	6 7%	0 0%	0 0%	0 0%	17 5%	3 1%	22 4%	43 6%
1994	4 2%	0 0%	0 0%	1 9%	0 0%	0 0%	0 0%	1 9%	0 0%	0 0%	0 0%	3 3%	0 0%	0 0%	88 7%
1995	0 6%	0 0%	0 0%	1 8%	0 0%	1 2%	0 0%	1 8%	0 0%	0 0%	2 4%	4 7%	2 4%	1 8%	83 4%
1996	4 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 2%	0 0%	0 0%	5 9%	1 1%	3 7%	83 0%
1997	4 9%	0 0%	9 8%	3 0%	0 0%	0 0%	0 0%	4 9%	2 4%	0 0%	0 0%	5 5%	0 0%	1 2%	68 3%
1998	3 7%	0 0%	0 0%	7 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	9 9%	0 0%	2 5%	76 5%
1999	4 4%	0 0%	3 7%	0 0%	0 0%	0 0%	4 4%	3 7%	0 0%	0 0%	0 0%	8 8%	0 0%	17 6%	57 4%
2000	3 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	7 4%	0 0%	0 0%	10 5%	13 7%	5 3%	7 4%	52 6%
2001	0 9%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 3%	0 0%	0 0%	1 6%	10 6%	1 6%	12 0%	72 1%
2002	6 1%	0 0%	0 0%	0 7%	0 0%	0 0%	0 0%	6 9%	0 0%	0 0%	3 6%	24 6%	7 4%	24 2%	26 4%
2003	5 0%	0 0%	0 0%	1 4%	0 0%	0 0%	0 0%	9 9%	1 4%	0 0%	1 9%	17 2%	8 9%	11 4%	42 8%
2004	4 3%	0 0%	0 0%	1 0%	0 0%	0 0%	0 0%	6 3%	0 0%	0 0%	0 0%	17 8%	9 1%	13 5%	48 1%
2005	2 7%	7 6%	0 0%	2 7%	0 0%	0 0%	0 0%	3 6%	0 0%	0 0%	3 1%	7 6%	3 6%	9 0%	60 1%
(81-84)	4 4%	0 0%	0 1%	4 4%	1 6%	1 0%	1 8%	18 2%	0 1%	1 5%	0 2%	9 9%	11 2%	11 9%	33 8%
(85-98)	3 6%	0 1%	0 8%	2 2%	0 7%	0 8%	0 1%	8 4%	0 4%	0 4%	0 5%	9 7%	8 8%	9 3%	54 2%
(99-05)	3 8%	1 1%	0 5%	0 8%	0 0%	0 0%	0 6%	5 6%	0 2%	0 0%	3 0%	14 3%	5 1%	13 6%	51 4%

Appendix E.54. Percent distribution of Cowlitz Tule Chinook total fishing mortalities among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Gwalt Trl/Sp	Other Fisheries Canada Net	Other Fisheries Canada Sport	Other Fisheries U.S. Troll	Other Fisheries U.S. Net	Other Fisheries U.S. Sport	Escapement
1981	6.0%	0.0%	0.0%	2.4%	0.0%	1.2%	6.3%	18.8%	0.0%	2.2%	0.0%	11.3%	14.2%	12.7%	25.0%
1982	4.3%	0.0%	0.4%	1.6%	0.4%	2.2%	0.0%	16.8%	0.0%	1.2%	1.0%	20.2%	9.5%	12.6%	29.8%
1983	4.4%	0.0%	0.0%	7.2%	3.9%	0.5%	0.0%	18.9%	0.3%	0.5%	0.0%	7.8%	4.7%	18.7%	33.2%
1984	4.5%	0.0%	0.0%	7.5%	2.3%	0.1%	0.9%	25.6%	0.0%	1.8%	0.0%	4.7%	14.8%	3.7%	34.2%
1985	4.0%	1.1%	0.0%	4.4%	0.0%	4.4%	0.0%	12.6%	0.4%	1.2%	0.0%	5.1%	6.3%	14.9%	45.4%
1986	0.5%	0.2%	0.0%	0.2%	0.7%	0.8%	0.0%	14.0%	0.3%	1.0%	0.0%	14.6%	30.1%	12.7%	24.9%
1987	6.0%	0.7%	0.0%	4.6%	1.4%	0.0%	0.0%	11.2%	0.0%	0.7%	0.9%	12.1%	21.2%	15.5%	25.6%
1988	1.8%	0.8%	0.0%	2.1%	0.0%	0.1%	0.0%	17.8%	0.0%	0.6%	0.0%	16.0%	22.7%	12.5%	25.7%
1989	4.6%	0.0%	0.7%	4.7%	0.0%	0.3%	0.0%	7.2%	0.0%	1.0%	0.0%	18.7%	6.8%	10.9%	45.2%
1990	4.4%	0.0%	0.0%	2.4%	3.4%	2.7%	0.0%	15.5%	0.0%	1.6%	0.0%	10.1%	0.0%	12.8%	47.8%
1991	12.4%	0.0%	0.0%	3.6%	1.5%	0.0%	0.0%	6.6%	0.0%	0.0%	2.9%	11.7%	10.9%	9.5%	40.9%
1992	2.5%	0.0%	0.0%	0.0%	2.5%	0.0%	2.0%	20.2%	0.0%	0.0%	0.0%	7.9%	5.4%	5.4%	54.2%
1993	4.3%	0.0%	0.0%	3.0%	0.0%	1.1%	0.0%	7.6%	0.0%	0.0%	0.0%	18.7%	3.0%	23.8%	38.5%
1994	5.1%	0.0%	0.0%	2.3%	0.0%	0.0%	0.0%	2.3%	0.0%	0.0%	0.0%	3.2%	0.0%	0.0%	87.1%
1995	1.1%	0.0%	0.0%	2.8%	0.0%	1.1%	0.0%	2.3%	0.0%	2.3%	2.3%	4.5%	2.3%	1.7%	79.7%
1996	5.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.5%	0.0%	0.0%	6.1%	1.1%	4.0%	80.9%
1997	5.7%	0.0%	10.8%	3.4%	0.0%	0.0%	0.0%	5.7%	2.8%	1.1%	0.0%	5.7%	0.0%	1.1%	63.6%
1998	4.8%	0.0%	0.0%	8.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.7%	0.0%	2.4%	73.8%
1999	6.7%	0.0%	4.0%	0.0%	0.0%	0.0%	5.4%	3.4%	0.0%	0.0%	0.0%	9.4%	0.0%	18.8%	52.3%
2000	3.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.5%	0.0%	0.0%	12.3%	17.0%	4.7%	7.5%	47.2%
2001	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	0.0%	0.0%	1.9%	12.3%	1.5%	13.3%	68.7%
2002	6.8%	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	6.4%	0.0%	0.0%	4.0%	26.3%	7.1%	24.5%	24.1%
2003	5.3%	0.0%	0.0%	1.5%	0.0%	0.0%	0.0%	10.0%	1.6%	0.0%	2.2%	18.4%	8.6%	12.0%	40.3%
2004	5.4%	0.0%	0.0%	0.9%	0.0%	0.0%	0.0%	5.8%	0.0%	0.0%	0.0%	19.3%	9.0%	14.8%	44.8%
2005	2.8%	13.0%	0.0%	2.8%	0.0%	0.0%	0.0%	3.3%	0.0%	0.0%	3.3%	8.1%	3.3%	8.9%	54.5%
(81-84)	4.8%	0.0%	0.1%	4.7%	1.7%	1.0%	1.8%	20.0%	0.1%	1.4%	0.3%	11.0%	10.8%	11.9%	30.6%
(85-98)	4.4%	0.2%	0.9%	2.6%	0.7%	0.8%	0.2%	9.5%	0.5%	0.7%	0.5%	10.3%	8.4%	9.6%	50.7%
(99-05)	4.6%	1.9%	0.6%	0.9%	0.0%	0.0%	0.8%	5.4%	0.2%	0.0%	3.4%	15.8%	4.9%	14.3%	47.4%

Appendix E.55. Percent distribution of Spring Creek Tule Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1979	0 0%	0 0%	0 0%	0 1%	0 7%	0 3%	0 0%	24 0%	1 5%	2 4%	0 1%	16 6%	23 5%	12 8%	18 3%
1980	0 1%	0 0%	0 0%	0 1%	0 5%	0 1%	0 0%	25 4%	2 8%	1 0%	0 1%	23 6%	23 7%	10 1%	12 6%
1981	0 0%	0 0%	0 0%	0 1%	0 2%	0 1%	0 0%	21 0%	1 5%	1 9%	0 1%	23 5%	20 7%	12 6%	18 3%
1982	0 0%	0 0%	0 0%	0 0%	0 5%	0 0%	0 0%	22 0%	1 0%	0 2%	0 0%	19 6%	35 6%	8 3%	12 7%
1983	0 0%	0 0%	0 0%	0 0%	0 4%	0 0%	0 0%	29 8%	1 1%	0 0%	0 5%	8 4%	20 2%	9 8%	29 7%
1984	0 0%	0 0%	0 0%	0 0%	2 4%	0 0%	0 0%	27 5%	0 0%	1 3%	0 4%	6 0%	25 9%	7 4%	29 1%
1985	0 0%	0 0%	0 0%	0 0%	0 2%	0 0%	0 0%	14 2%	0 0%	0 2%	0 7%	13 8%	27 2%	4 0%	39 7%
1986	0 0%	0 0%	0 0%	0 0%	2 9%	0 0%	0 0%	20 6%	1 9%	1 6%	2 5%	2 5%	36 2%	7 9%	23 8%
1987	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	7 9%	0 0%	0 0%	0 0%	14 0%	38 6%	20 2%	19 3%
1988	0 0%	0 0%	0 0%	0 5%	0 3%	0 2%	0 0%	23 2%	0 9%	1 9%	2 2%	18 3%	31 0%	10 3%	11 3%
1989	0 0%	0 0%	0 0%	0 2%	0 0%	0 0%	0 0%	14 4%	0 4%	0 4%	3 3%	24 8%	34 5%	8 3%	13 8%
1990	0 0%	0 0%	0 0%	0 2%	0 3%	0 1%	0 0%	17 6%	0 7%	0 8%	4 5%	14 3%	23 0%	13 1%	25 3%
1991	0 0%	0 0%	0 0%	0 0%	0 3%	0 1%	0 0%	13 1%	0 2%	0 4%	1 3%	16 9%	34 2%	11 0%	22 5%
1992	0 0%	0 0%	0 0%	0 0%	0 3%	0 0%	0 0%	11 9%	0 6%	0 5%	2 5%	26 5%	14 7%	11 8%	31 3%
1993	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	17 7%	0 0%	0 4%	4 2%	17 7%	21 4%	10 5%	28 2%
1994	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	18 6%	0 0%	0 8%	3 9%	3 5%	28 9%	0 8%	43 4%
1995	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	6 7%	0 0%	0 2%	2 7%	1 8%	37 9%	0 0%	50 7%
1996	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 1%	6 1%	57 8%	3 3%	29 7%
1997	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	11 9%	0 0%	0 0%	2 7%	5 4%	24 3%	11 7%	44 0%
1998	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 3%	0 0%	0 0%	0 5%	2 8%	15 0%	12 8%	68 5%
1999	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 3%	0 3%	0 0%	3 8%	16 9%	36 5%	9 3%	33 0%
2000	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 7%	0 0%	0 0%	4 5%	5 5%	22 3%	9 9%	54 0%
2001	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 2%	0 2%	0 0%	0 4%	14 0%	22 6%	5 3%	54 3%
2002	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	10 6%	0 2%	0 0%	1 4%	16 0%	26 7%	10 5%	34 5%
2003	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	10 2%	0 0%	0 0%	2 1%	10 6%	22 3%	5 6%	49 2%
2004	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	11 5%	0 0%	0 0%	2 9%	8 7%	15 0%	5 3%	56 6%
2005	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	18 5%	0 0%	0 0%	2 7%	6 3%	28 7%	2 2%	41 7%
(79-84)	0 0%	0 0%	0 0%	0 1%	0 8%	0 1%	0 0%	25 0%	1 3%	1 1%	0 2%	16 3%	24 9%	10 2%	20 1%
(85-98)	0 0%	0 0%	0 0%	0 1%	0 3%	0 0%	0 0%	12 7%	0 3%	0 5%	2 4%	12 0%	30 3%	9 0%	32 3%
(99-05)	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	8 3%	0 1%	0 0%	2 5%	11 1%	24 9%	6 9%	46 2%

Appendix E.56. Percent distribution of Spring Creek Tule Chinook total fishing mortalities among fisheries and escapement.

										Other Fisheries				
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1979	0 0%	0 0%	0 0%	0 1%	0 8%	0 2%	0 0%	27 3%	1 3%	2 2%	0 1%	18 0%	21 5%	13 3%	15 2%
1980	0 1%	0 0%	0 0%	0 1%	0 6%	0 1%	0 0%	27 8%	2 5%	0 9%	0 1%	24 7%	21 9%	10 7%	10 6%
1981	0 0%	0 0%	0 0%	0 1%	0 2%	0 1%	0 0%	22 9%	1 4%	1 8%	0 1%	24 7%	19 7%	12 9%	16 1%
1982	0 0%	0 0%	0 0%	0 0%	0 5%	0 0%	0 0%	25 0%	1 0%	0 2%	0 0%	21 4%	32 9%	8 0%	11 1%
1983	0 0%	0 0%	0 0%	0 0%	0 5%	0 0%	0 0%	31 5%	1 1%	0 0%	0 5%	9 1%	18 9%	12 1%	26 4%
1984	0 0%	0 0%	0 0%	0 0%	2 4%	0 0%	0 0%	27 2%	0 0%	1 2%	0 3%	6 1%	24 6%	12 7%	25 5%
1985	0 0%	0 0%	0 0%	0 0%	0 2%	0 0%	0 0%	15 3%	0 0%	0 2%	0 6%	16 0%	27 0%	4 1%	36 6%
1986	0 0%	0 0%	0 0%	0 0%	2 9%	0 0%	0 0%	21 8%	1 8%	1 8%	2 7%	2 7%	35 4%	8 8%	22 1%
1987	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	9 9%	0 0%	0 0%	0 0%	15 2%	40 4%	19 9%	14 6%
1988	0 0%	0 0%	0 0%	0 5%	0 2%	0 2%	0 0%	26 8%	1 0%	1 5%	2 2%	18 8%	27 3%	12 6%	8 9%
1989	0 0%	0 0%	0 0%	0 2%	0 0%	0 0%	0 0%	16 5%	0 5%	0 4%	3 2%	26 7%	31 9%	8 8%	11 8%
1990	0 0%	0 0%	0 0%	0 2%	0 4%	0 1%	0 0%	19 9%	0 7%	0 8%	4 5%	15 5%	21 1%	14 9%	21 7%
1991	0 0%	0 0%	0 0%	0 0%	0 3%	0 1%	0 0%	15 2%	0 3%	0 4%	1 3%	18 6%	32 0%	12 2%	19 6%
1992	0 0%	0 0%	0 0%	0 0%	0 3%	0 0%	0 0%	14 0%	0 7%	0 5%	2 4%	28 7%	13 8%	12 3%	27 5%
1993	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	19 7%	0 0%	0 3%	4 2%	19 2%	19 8%	11 7%	25 0%
1994	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	22 0%	0 0%	0 9%	4 0%	3 5%	28 6%	1 1%	39 9%
1995	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	10 1%	0 0%	0 4%	2 8%	1 8%	37 8%	0 0%	47 1%
1996	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 4%	0 0%	0 0%	3 2%	6 0%	57 9%	3 9%	27 7%
1997	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	14 7%	0 0%	0 0%	2 6%	5 8%	23 5%	13 2%	40 2%
1998	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 2%	0 0%	0 0%	0 6%	3 3%	15 3%	16 8%	63 7%
1999	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 3%	0 3%	0 0%	3 8%	19 2%	35 8%	10 7%	29 9%
2000	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 9%	0 0%	0 0%	5 3%	6 2%	21 3%	16 0%	47 4%
2001	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 2%	0 3%	0 0%	0 5%	16 2%	22 7%	6 9%	50 3%
2002	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	10 6%	0 3%	0 0%	1 6%	18 4%	26 1%	11 5%	31 5%
2003	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	10 4%	0 0%	0 0%	2 5%	11 9%	22 3%	6 2%	46 7%
2004	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	11 5%	0 0%	0 0%	3 2%	10 1%	15 1%	5 8%	54 2%
2005	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	19 0%	0 0%	0 0%	3 1%	7 1%	28 6%	2 3%	39 9%
(79-84)	0 0%	0 0%	0 0%	0 1%	0 8%	0 1%	0 0%	27 0%	1 2%	1 1%	0 2%	17 3%	23 3%	11 6%	17 5%
(85-98)	0 0%	0 0%	0 0%	0 1%	0 3%	0 0%	0 0%	14 8%	0 4%	0 5%	2 5%	13 0%	29 4%	10 0%	29 0%
(99-05)	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	8 4%	0 1%	0 0%	2 9%	12 7%	24 6%	8 5%	42 8%

Appendix E.57. Percent distribution of Columbia Lower River Hatchery Chinook reported catch among fisheries and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Geo8t Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1980	0 8%	0 0%	0 0%	0 0%	0 5%	1 3%	0 0%	16 0%	3 4%	6 4%	1 3%	18 3%	9 8%	22 4%	19 8%
1981	0 0%	0 0%	0 0%	0 0%	0 5%	0 1%	0 0%	30 6%	1 8%	2 4%	0 3%	22 6%	1 9%	11 6%	28 2%
1982	0 0%	0 0%	0 0%	0 3%	1 8%	0 0%	0 0%	26 0%	0 8%	0 3%	0 5%	18 6%	16 4%	9 0%	26 5%
1983	0 0%	0 0%	0 0%	0 0%	2 3%	0 3%	0 1%	35 0%	1 4%	0 6%	0 4%	11 2%	6 8%	8 5%	33 4%
1984	0 0%	0 0%	0 0%	0 0%	3 2%	0 0%	0 0%	49 9%	1 3%	1 6%	0 3%	5 9%	11 3%	3 7%	22 7%
1985	0 0%	0 0%	0 0%	0 0%	0 9%	0 4%	0 0%	28 2%	1 1%	1 2%	0 7%	15 6%	4 1%	5 8%	41 9%
1986	0 0%	0 0%	0 0%	0 0%	0 0%	0 7%	0 1%	9 1%	2 5%	7 5%	2 7%	6 9%	11 2%	11 5%	47 9%
1987	0 0%	0 0%	0 0%	0 2%	1 6%	0 0%	0 0%	26 9%	0 5%	0 2%	2 5%	16 6%	20 7%	9 5%	21 3%
1988	0 3%	0 0%	0 0%	0 3%	0 6%	0 0%	0 0%	28 8%	1 0%	0 0%	2 4%	11 5%	24 3%	3 2%	27 6%
1989	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	15 4%	0 0%	2 0%	0 0%	22 4%	5 9%	5 1%	49 2%
1990	0 0%	0 0%	0 0%	0 0%	0 0%	0 3%	0 0%	19 8%	0 0%	1 7%	0 0%	16 3%	0 3%	11 1%	50 3%
1991	0 0%	0 0%	0 0%	0 0%	0 2%	0 0%	0 0%	10 2%	0 7%	2 5%	2 0%	9 3%	2 3%	14 9%	57 9%
1992	0 0%	0 0%	0 0%	0 0%	0 5%	0 0%	0 0%	16 3%	0 0%	1 0%	1 9%	28 0%	0 8%	11 0%	40 5%
1993	0 0%	0 0%	0 0%	0 0%	0 6%	0 0%	0 0%	18 4%	0 0%	0 0%	4 5%	19 7%	2 0%	11 1%	43 6%
1994	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	27 6%	10 3%	0 0%	0 0%	0 0%	0 0%	0 0%	62 1%
1995	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 3%	10 0%	86 7%
1996	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	8 1%	6 5%	0 0%	85 5%
1997	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	16 4%	2 9%	0 0%	3 9%	8 7%	1 0%	11 6%	55 6%
1998	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	4 0%	1 0%	0 0%	0 0%	5 1%	1 0%	2 0%	23 2%	63 6%
1999	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 3%	0 0%	0 0%	9 1%	6 8%	3 6%	9 4%	68 7%
2000	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	17 1%	1 9%	0 0%	10 6%	2 3%	2 8%	4 6%	60 6%
2001	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	8 3%	0 3%	0 0%	1 7%	19 5%	1 5%	8 8%	59 9%
2002	0 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	9 9%	0 0%	0 0%	3 3%	19 6%	13 4%	10 3%	43 2%
2003	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	16 4%	0 4%	0 0%	4 8%	15 4%	7 3%	9 9%	45 8%
2004	0 5%	0 0%	0 0%	0 3%	0 0%	0 0%	0 7%	21 0%	0 5%	0 0%	9 2%	8 5%	18 6%	5 1%	35 6%
2005	0 0%	0 0%	0 0%	0 4%	0 0%	0 0%	0 0%	29 0%	0 0%	0 0%	7 3%	7 1%	19 4%	2 5%	34 3%
(80-84)	0 2%	0 0%	0 0%	0 1%	1 7%	0 3%	0 0%	31 5%	1 7%	2 3%	0 6%	15 3%	9 2%	11 0%	26 1%
(85-98)	0 0%	0 0%	0 0%	0 0%	0 3%	0 1%	0 3%	15 6%	1 4%	1 2%	1 8%	11 7%	6 0%	9 1%	52 4%
(99-05)	0 1%	0 0%	0 0%	0 1%	0 0%	0 0%	0 1%	14 9%	0 4%	0 0%	6 6%	11 3%	9 5%	7 2%	49 7%

Appendix E.58. Percent distribution of Columbia Lower River Hatchery Chinook total fishing mortalities among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Gen/St Trl&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1980	0 4%	0 0%	0 0%	0 1%	0 8%	0 8%	0 0%	32 4%	2 0%	4 2%	0 7%	23 1%	6 7%	17 7%	10 9%
1981	0 0%	0 0%	0 0%	0 0%	0 5%	0 1%	0 0%	33 4%	1 6%	2 2%	0 3%	25 0%	1 8%	11 5%	23 6%
1982	0 0%	0 0%	0 0%	0 3%	2 0%	0 0%	0 0%	29 2%	0 8%	0 3%	0 5%	20 0%	15 2%	8 9%	22 9%
1983	0 0%	0 0%	0 0%	0 0%	2 4%	0 3%	0 1%	37 0%	1 3%	0 5%	0 4%	12 3%	6 7%	9 6%	29 4%
1984	0 0%	0 0%	0 0%	0 0%	3 4%	0 0%	0 0%	51 6%	1 3%	1 6%	0 2%	6 3%	11 1%	4 1%	20 4%
1985	0 0%	0 0%	0 0%	0 0%	0 9%	0 4%	0 0%	30 3%	1 1%	1 2%	0 7%	17 7%	4 1%	5 9%	37 7%
1986	0 0%	0 0%	0 0%	0 0%	0 0%	0 6%	0 2%	8 5%	1 9%	6 3%	2 5%	6 3%	9 5%	30 0%	34 1%
1987	0 0%	0 0%	0 0%	0 2%	1 9%	0 0%	0 0%	33 0%	0 5%	0 2%	2 2%	17 3%	18 4%	8 6%	17 6%
1988	0 3%	0 0%	0 0%	0 3%	0 6%	0 0%	0 0%	31 6%	1 0%	0 0%	2 4%	11 7%	23 1%	3 3%	25 8%
1989	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	17 0%	0 0%	1 8%	0 0%	25 3%	5 4%	5 4%	45 1%
1990	0 0%	0 0%	0 0%	0 0%	0 0%	0 3%	0 0%	22 8%	0 0%	1 5%	0 0%	18 2%	0 3%	12 0%	44 8%
1991	0 0%	0 0%	0 0%	0 0%	0 2%	0 0%	0 0%	12 3%	1 0%	2 4%	2 2%	10 9%	2 4%	18 2%	50 6%
1992	0 0%	0 0%	0 0%	0 0%	0 6%	0 0%	0 0%	19 5%	0 0%	0 8%	1 8%	30 3%	0 7%	11 3%	34 9%
1993	0 0%	0 0%	0 0%	0 0%	0 7%	0 0%	0 0%	20 8%	0 0%	0 0%	4 3%	20 8%	1 9%	11 6%	39 9%
1994	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	31 3%	12 5%	0 0%	0 0%	0 0%	0 0%	0 0%	56 3%
1995	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 1%	0 0%	0 0%	3 1%	12 5%	81 3%
1996	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	8 1%	6 5%	0 0%	85 5%
1997	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	20 2%	3 1%	0 4%	3 5%	9 2%	0 9%	12 3%	50 4%
1998	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	6 5%	0 9%	0 0%	0 0%	5 6%	0 9%	1 9%	25 9%	58 3%
1999	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 2%	0 0%	0 0%	9 6%	8 0%	3 7%	11 1%	65 3%
2000	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	17 7%	2 5%	0 0%	12 3%	2 5%	2 5%	8 6%	53 9%
2001	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	8 4%	0 3%	0 0%	2 0%	22 4%	1 5%	10 8%	54 6%
2002	0 5%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	9 9%	0 0%	0 0%	3 8%	22 3%	13 1%	11 0%	39 5%
2003	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	16 0%	0 6%	0 0%	5 5%	17 5%	7 2%	10 5%	42 7%
2004	0 5%	0 0%	0 0%	0 3%	0 0%	0 0%	1 0%	20 6%	0 6%	0 0%	10 3%	9 1%	18 3%	5 3%	34 0%
2005	0 0%	0 0%	0 0%	0 3%	0 0%	0 0%	0 0%	29 0%	0 0%	0 0%	8 4%	7 5%	19 2%	2 6%	33 0%
(80-84)	0 1%	0 0%	0 0%	0 1%	1 8%	0 2%	0 0%	36 7%	1 4%	1 8%	0 4%	17 3%	8 3%	10 4%	21 4%
(85-98)	0 0%	0 0%	0 0%	0 0%	0 4%	0 1%	0 5%	17 7%	1 5%	1 3%	1 8%	12 6%	5 6%	11 2%	47 3%
(99-05)	0 1%	0 0%	0 0%	0 1%	0 0%	0 0%	0 1%	14 8%	0 6%	0 0%	7 4%	12 8%	9 4%	8 6%	46 1%

Appendix E.59. Percent distribution of Upriver Bright Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	NCBC Net	NCBC Sport	WCVI Troll	Gwaii Trl&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1979	18.0%	0.3%	0.6%	7.6%	4.0%	3.7%	0.1%	11.8%	0.5%	0.7%	0.0%	1.3%	23.0%	1.8%	26.7%
1980	19.9%	0.6%	0.5%	6.5%	1.6%	1.7%	0.1%	7.3%	1.0%	0.2%	0.0%	1.1%	6.3%	1.8%	51.4%
1981	16.1%	0.0%	0.4%	5.6%	1.1%	1.3%	0.0%	3.8%	0.4%	0.5%	0.2%	0.5%	3.6%	1.0%	65.8%
1982	6.4%	0.4%	0.2%	3.5%	0.2%	1.1%	0.1%	4.6%	0.0%	0.4%	0.0%	0.6%	2.5%	0.7%	79.2%
1983	15.5%	0.2%	0.0%	10.7%	1.8%	3.4%	0.2%	3.7%	0.2%	0.1%	0.0%	0.4%	8.1%	0.0%	55.6%
1984	14.5%	1.1%	0.1%	8.6%	2.0%	1.5%	0.2%	7.2%	0.2%	0.8%	0.2%	0.2%	15.3%	1.9%	46.3%
1985	9.2%	1.2%	0.2%	8.8%	0.8%	1.3%	0.0%	7.9%	0.1%	1.2%	0.1%	0.4%	32.8%	4.5%	31.5%
1986	10.3%	0.7%	0.1%	7.9%	1.2%	1.0%	0.0%	6.3%	0.1%	0.2%	0.1%	0.7%	33.1%	2.4%	35.8%
1987	14.6%	0.4%	0.4%	12.4%	1.8%	0.6%	0.1%	7.8%	0.0%	0.1%	0.3%	1.5%	35.2%	3.7%	21.2%
1988	10.2%	0.8%	0.5%	7.4%	0.6%	0.6%	0.0%	11.2%	0.0%	0.1%	0.0%	2.1%	47.0%	2.6%	16.9%
1989	11.9%	0.0%	0.2%	14.9%	0.2%	0.7%	0.6%	7.7%	0.0%	0.7%	0.0%	1.2%	42.5%	2.0%	17.3%
1990	13.6%	0.0%	1.0%	9.9%	0.7%	0.7%	0.0%	8.1%	0.0%	0.0%	0.0%	1.2%	33.8%	2.4%	28.6%
1991	6.3%	0.4%	2.6%	5.9%	0.0%	0.0%	0.0%	8.9%	0.0%	0.0%	0.0%	0.7%	19.6%	4.4%	51.1%
1992	3.0%	0.0%	0.0%	3.0%	0.0%	2.3%	0.0%	11.5%	0.0%	0.7%	1.0%	0.0%	17.0%	6.6%	55.1%
1993	10.9%	0.0%	0.0%	6.7%	0.0%	0.4%	0.6%	17.0%	0.0%	0.0%	0.0%	1.7%	15.7%	6.5%	40.4%
1994	9.8%	0.9%	0.6%	8.0%	0.2%	0.9%	1.7%	6.9%	0.0%	0.0%	0.7%	0.0%	14.2%	3.5%	53.1%
1995	8.1%	0.1%	1.7%	2.0%	0.0%	0.4%	0.0%	5.3%	0.0%	0.0%	0.0%	0.7%	9.9%	4.3%	67.3%
1996	2.9%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.8%	22.4%	5.4%	68.0%
1997	11.0%	0.3%	2.5%	4.5%	0.2%	0.0%	0.6%	0.5%	0.0%	0.0%	0.1%	1.0%	20.6%	11.4%	47.2%
1998	8.1%	1.5%	2.2%	2.6%	0.0%	0.0%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	13.6%	6.3%	64.5%
1999	10.4%	0.5%	2.6%	3.8%	0.0%	0.0%	1.0%	0.0%	0.4%	0.0%	0.3%	0.5%	13.5%	9.7%	57.2%
2000	16.7%	0.1%	2.3%	0.0%	0.0%	0.0%	1.8%	0.9%	0.0%	0.0%	1.8%	0.3%	21.0%	4.6%	50.5%
2001	3.8%	0.0%	0.7%	0.0%	0.0%	0.0%	0.7%	0.7%	0.0%	0.0%	0.2%	1.7%	13.0%	7.8%	71.5%
2002	14.2%	0.0%	2.3%	0.8%	0.0%	0.0%	0.8%	1.4%	0.3%	0.1%	0.5%	1.7%	18.8%	8.4%	50.6%
2003	13.6%	0.9%	0.6%	4.5%	0.0%	0.0%	0.9%	0.7%	0.0%	0.0%	0.5%	0.7%	14.3%	7.3%	56.1%
2004	8.7%	1.2%	0.5%	3.0%	0.0%	0.0%	1.6%	2.4%	0.0%	0.0%	0.4%	0.8%	18.6%	7.0%	55.8%
2005	13.9%	1.4%	0.9%	8.6%	0.0%	0.0%	3.9%	3.8%	0.0%	0.0%	2.0%	0.7%	13.4%	7.8%	43.5%
(79-84)	15.1%	0.4%	0.3%	7.1%	1.8%	2.1%	0.1%	6.4%	0.4%	0.5%	0.1%	0.7%	9.8%	1.2%	54.2%
(85-98)	9.3%	0.5%	0.8%	6.7%	0.4%	0.7%	0.4%	7.1%	0.0%	0.2%	0.2%	0.9%	25.5%	4.7%	42.7%
(99-05)	11.6%	0.6%	1.4%	3.0%	0.0%	0.0%	1.5%	1.4%	0.1%	0.0%	0.8%	0.9%	16.1%	7.5%	55.0%

Appendix E.60. Percent distribution of Upriver Bright Chinook total fishing mortalities among fisheries and escapement.

										Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Geo/St Trl&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1979	18 4%	0 3%	0 6%	7 9%	4 1%	3 7%	0 1%	12 5%	0 5%	0 7%	0 0%	1 3%	22 3%	2 0%	25 5%
1980	20 8%	0 6%	0 6%	7 0%	1 7%	1 7%	0 1%	7 8%	1 0%	0 2%	0 0%	1 1%	6 2%	1 9%	49 2%
1981	17 1%	0 0%	0 4%	5 9%	1 1%	1 3%	0 0%	4 1%	0 3%	0 5%	0 2%	0 6%	3 6%	1 1%	63 9%
1982	8 9%	0 4%	0 3%	4 4%	0 3%	1 1%	0 2%	5 5%	0 0%	0 5%	0 0%	0 8%	2 5%	0 7%	74 5%
1983	22 1%	0 3%	0 0%	11 7%	2 0%	3 3%	0 2%	3 8%	0 2%	0 1%	0 0%	0 4%	7 4%	0 0%	48 5%
1984	17 6%	1 2%	0 2%	9 8%	2 2%	1 4%	0 2%	8 2%	0 2%	0 8%	0 2%	0 2%	14 4%	2 3%	41 0%
1985	12 9%	2 3%	0 3%	9 0%	0 8%	1 3%	0 0%	8 1%	0 1%	1 1%	0 1%	0 5%	30 9%	4 6%	28 2%
1986	12 2%	1 5%	0 1%	8 1%	1 3%	1 0%	0 0%	6 7%	0 1%	0 2%	0 1%	0 8%	31 9%	2 7%	33 4%
1987	19 4%	1 0%	0 4%	13 1%	2 0%	0 6%	0 1%	8 5%	0 0%	0 1%	0 3%	1 5%	31 4%	3 5%	18 3%
1988	11 4%	2 1%	0 5%	7 9%	0 6%	0 6%	0 0%	12 4%	0 0%	0 1%	0 0%	2 2%	44 0%	2 7%	15 5%
1989	14 5%	0 0%	0 2%	15 2%	0 2%	0 7%	0 5%	8 1%	0 0%	0 7%	0 0%	1 2%	40 4%	2 0%	16 1%
1990	14 2%	0 0%	1 1%	10 8%	0 8%	0 7%	0 0%	8 7%	0 0%	0 0%	0 0%	1 3%	32 6%	2 5%	27 2%
1991	8 1%	0 7%	3 4%	6 8%	0 0%	0 0%	0 0%	10 1%	0 0%	0 0%	0 0%	1 0%	18 6%	4 7%	46 6%
1992	3 6%	0 0%	0 0%	3 6%	0 0%	2 4%	0 0%	13 4%	0 0%	0 6%	1 2%	0 0%	16 7%	7 3%	51 1%
1993	16 6%	0 0%	0 0%	7 6%	0 0%	0 3%	0 5%	18 6%	0 0%	0 0%	0 0%	1 6%	14 0%	6 1%	34 7%
1994	11 8%	1 8%	0 0%	8 5%	0 2%	1 0%	1 7%	7 3%	0 0%	0 0%	0 6%	0 0%	13 6%	3 6%	49 9%
1995	10 2%	0 1%	2 4%	2 7%	0 0%	0 5%	0 0%	7 0%	0 0%	0 1%	0 0%	0 7%	9 6%	4 5%	62 1%
1996	4 4%	0 0%	0 0%	1 4%	0 0%	0 2%	0 5%	0 7%	0 0%	0 0%	0 0%	0 7%	22 1%	6 2%	63 7%
1997	12 7%	0 5%	3 2%	4 9%	0 2%	0 0%	0 9%	0 6%	0 0%	0 0%	0 1%	1 0%	19 7%	11 8%	44 4%
1998	9 9%	4 5%	2 8%	2 9%	0 0%	0 0%	1 3%	0 1%	0 0%	0 0%	0 0%	0 0%	13 1%	7 0%	58 4%
1999	13 5%	1 5%	2 8%	4 1%	0 0%	0 0%	1 1%	0 0%	0 4%	0 0%	0 3%	0 6%	12 8%	10 1%	52 8%
2000	22 1%	0 1%	3 2%	0 0%	0 0%	0 0%	3 0%	1 1%	0 0%	0 0%	2 1%	0 3%	18 9%	4 4%	44 7%
2001	5 4%	0 0%	1 0%	0 0%	0 0%	0 0%	1 0%	0 7%	0 0%	0 0%	0 3%	1 9%	13 0%	8 8%	67 8%
2002	16 3%	0 0%	2 5%	0 9%	0 0%	0 0%	0 9%	1 3%	0 4%	1 1%	0 6%	1 9%	18 1%	8 8%	47 1%
2003	15 1%	2 6%	0 6%	4 9%	0 0%	0 0%	1 2%	0 7%	0 0%	0 0%	0 6%	0 8%	13 7%	7 7%	52 2%
2004	10 4%	3 7%	0 6%	3 4%	0 0%	0 0%	2 2%	2 3%	0 0%	0 0%	0 4%	0 9%	17 7%	7 4%	51 1%
2005	14 8%	2 5%	0 9%	9 0%	0 0%	0 0%	4 7%	3 7%	0 0%	0 0%	2 2%	0 8%	12 8%	8 0%	40 6%
(79-84)	17 5%	0 5%	0 4%	7 8%	1 9%	2 1%	0 1%	7 0%	0 4%	0 5%	0 1%	0 7%	9 4%	1 3%	50 4%
(85-98)	11 6%	1 0%	1 0%	7 3%	0 4%	0 7%	0 4%	7 9%	0 0%	0 2%	0 2%	0 9%	24 2%	4 9%	39 3%
(99-05)	13 9%	1 5%	1 7%	3 2%	0 0%	0 0%	2 0%	1 4%	0 1%	0 2%	0 9%	1 0%	15 3%	7 9%	50 9%

Appendix E.61. Percent distribution of Hanford Wild Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Gnalft Trol/Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1990	8.4%	0.5%	0.0%	4.3%	0.5%	0.5%	0.0%	8.4%	0.0%	0.2%	3.6%	0.5%	22.5%	7.0%	43.6%
1991	8.6%	0.0%	1.3%	9.4%	0.2%	0.0%	0.5%	4.7%	0.8%	0.0%	0.0%	1.0%	23.3%	4.4%	45.7%
1992	16.6%	0.4%	1.4%	6.0%	0.0%	0.0%	0.0%	16.3%	0.0%	0.0%	0.0%	1.1%	18.7%	2.8%	36.7%
1993	14.0%	0.0%	2.1%	2.9%	0.0%	0.5%	1.3%	5.3%	0.0%	1.9%	1.9%	3.7%	16.1%	8.2%	42.1%
1994	14.4%	0.8%	0.0%	4.8%	0.3%	1.1%	0.0%	4.4%	0.0%	0.3%	0.0%	0.7%	12.4%	5.4%	55.3%
1995	11.0%	0.0%	3.7%	4.3%	0.0%	0.0%	0.0%	2.3%	0.0%	0.0%	0.0%	0.0%	9.8%	7.0%	62.0%
1996	9.8%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	28.4%	7.8%	53.5%
1997	16.2%	0.6%	0.9%	3.6%	0.0%	0.0%	2.5%	0.8%	0.0%	0.0%	0.0%	0.9%	13.9%	7.4%	53.1%
1998	12.7%	0.0%	0.0%	8.4%	0.0%	0.0%	2.4%	0.0%	0.0%	0.0%	0.0%	0.0%	17.2%	6.3%	53.0%
1999	10.4%	0.4%	2.1%	7.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.9%	6.7%	60.4%
2000	16.4%	0.5%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	29.1%	5.5%	46.8%
2001	4.3%	1.2%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	20.5%	14.4%	57.6%
2002	13.7%	0.0%	1.3%	0.1%	0.0%	0.0%	0.7%	2.9%	0.0%	0.0%	0.0%	1.4%	11.5%	10.8%	57.6%
2003	12.5%	0.0%	0.9%	3.8%	0.0%	0.0%	0.6%	0.0%	0.0%	0.0%	0.3%	0.6%	15.2%	9.2%	56.8%
2004	15.9%	0.0%	2.7%	5.6%	0.0%	0.0%	2.1%	2.4%	0.0%	0.0%	0.0%	0.4%	22.5%	4.0%	44.5%
(90-98)	12.2%	0.0%	0.0%	8.3%	0.0%	0.0%	3.5%	3.9%	0.0%	0.0%	0.9%	2.8%	12.5%	16.6%	39.3%
(99-05)	12.4%	0.3%	1.0%	4.9%	0.1%	0.3%	0.7%	4.7%	0.1%	0.3%	0.6%	0.9%	18.0%	6.3%	49.4%

Appendix E.62. Percent distribution of Hanford Wild Chinook total fishing mortalities among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Gnalft Trol/Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1990	9.3%	1.1%	0.4%	5.1%	0.4%	0.4%	0.0%	8.9%	0.0%	0.2%	3.6%	0.6%	21.7%	7.4%	40.8%
1991	10.7%	0.0%	1.4%	10.4%	0.2%	0.0%	0.5%	5.1%	1.0%	0.0%	0.0%	1.1%	22.1%	4.5%	43.2%
1992	18.9%	1.3%	1.6%	7.3%	0.0%	0.0%	0.0%	17.7%	0.0%	0.0%	0.0%	0.9%	17.0%	2.5%	32.8%
1993	20.6%	0.0%	2.1%	3.0%	0.0%	0.5%	1.2%	6.0%	0.0%	1.6%	1.9%	3.7%	14.4%	8.1%	36.9%
1994	17.5%	1.9%	0.0%	5.2%	0.3%	1.0%	0.0%	4.7%	0.0%	0.3%	0.0%	0.6%	11.7%	5.5%	51.2%
1995	13.1%	0.0%	4.1%	5.4%	0.0%	0.0%	0.0%	2.8%	0.0%	0.3%	0.0%	0.0%	9.2%	7.1%	57.9%
1996	13.0%	0.0%	0.0%	0.2%	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	27.4%	8.0%	50.7%
1997	17.8%	1.2%	1.0%	3.6%	0.0%	0.0%	3.1%	0.9%	0.0%	0.1%	0.0%	0.9%	13.3%	7.6%	50.4%
1998	14.5%	0.0%	0.0%	9.4%	0.0%	0.0%	2.8%	0.0%	0.0%	0.0%	0.0%	0.0%	16.5%	6.6%	50.1%
1999	13.8%	1.5%	2.3%	7.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.3%	6.5%	55.8%
2000	19.7%	0.4%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	27.8%	5.6%	44.0%
2001	5.9%	2.7%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	19.7%	15.1%	54.1%
2002	17.5%	0.0%	1.4%	0.1%	0.0%	0.0%	0.9%	2.8%	0.0%	0.0%	0.0%	1.5%	11.0%	11.1%	53.6%
2003	13.4%	0.0%	0.9%	4.0%	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.4%	0.6%	15.0%	9.7%	55.2%
2004	17.3%	0.0%	2.8%	5.9%	0.0%	0.0%	3.0%	2.4%	0.0%	0.0%	0.0%	0.4%	21.7%	4.1%	42.4%
(90-98)	14.0%	0.0%	0.0%	9.0%	0.0%	0.0%	4.1%	3.7%	0.0%	0.0%	1.1%	2.8%	11.8%	17.0%	36.6%
(99-05)	15.0%	0.6%	1.2%	5.5%	0.1%	0.3%	0.8%	5.1%	0.1%	0.3%	0.6%	0.9%	17.0%	6.4%	46.0%

Appendix E.63. Percent distribution of Lyons Ferry Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Geo/St Trl&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1988	2 8%	0 0%	0 0%	3 3%	0 6%	0 8%	0 0%	18 6%	0 0%	0 3%	0 0%	10 8%	29 7%	3 9%	29 4%
1989	2 8%	0 0%	0 0%	6 3%	0 0%	0 4%	0 0%	16 0%	0 0%	1 2%	0 9%	12 3%	27 3%	6 6%	26 2%
1990	5 3%	0 0%	0 0%	3 5%	0 0%	0 5%	0 0%	16 1%	0 0%	0 0%	0 0%	9 6%	26 4%	5 8%	32 8%
1991	2 7%	0 0%	1 8%	4 9%	0 0%	0 4%	0 0%	8 8%	0 0%	0 9%	0 0%	4 0%	12 8%	2 7%	61 1%
1992	1 2%	0 6%	0 0%	3 6%	0 0%	1 2%	0 0%	10 7%	0 0%	1 2%	3 0%	5 9%	8 3%	1 8%	62 7%
1993	3 6%	0 0%	0 0%	4 7%	0 8%	0 8%	0 0%	10 3%	0 0%	1 2%	0 0%	7 9%	13 8%	1 6%	55 3%
1994	6 1%	0 5%	1 4%	6 1%	0 7%	0 5%	0 0%	7 1%	0 7%	2 2%	0 0%	0 0%	7 3%	0 5%	67 0%
2003	6 9%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 0%	0 0%	0 0%	0 0%	5 1%	11 6%	4 9%	70 4%
2004	2 3%	0 0%	0 0%	1 3%	0 0%	0 0%	1 3%	1 6%	0 0%	0 0%	1 3%	5 0%	7 2%	4 0%	76 0%
2005	3 5%	0 2%	0 0%	3 0%	0 0%	0 0%	1 2%	3 5%	0 0%	0 0%	0 0%	3 5%	13 5%	4 4%	67 1%
(88-94)	3 5%	0 2%	0 5%	4 6%	0 3%	0 7%	0 0%	12 5%	0 1%	1 0%	0 6%	7 2%	17 9%	3 3%	47 8%
(03-05)	4 2%	0 1%	0 0%	1 4%	0 0%	0 0%	0 8%	2 0%	0 0%	0 0%	0 4%	4 5%	10 8%	4 4%	71 2%

Appendix E.64. Percent distribution of Lyons Ferry Chinook total fishing mortalities among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Geo/St Trl&Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1988	3 2%	0 0%	0 1%	4 0%	0 6%	0 7%	0 0%	21 1%	0 0%	0 2%	0 0%	11 6%	27 7%	4 0%	26 8%
1989	4 2%	0 0%	0 0%	7 0%	0 0%	0 4%	0 0%	17 9%	0 0%	1 1%	0 9%	12 9%	25 4%	6 6%	23 6%
1990	5 5%	0 0%	0 0%	3 7%	0 0%	0 5%	0 0%	17 1%	0 0%	0 0%	0 0%	10 0%	25 7%	6 3%	31 3%
1991	3 4%	0 0%	2 1%	5 5%	0 0%	0 4%	0 0%	10 1%	0 0%	0 8%	0 0%	4 2%	12 6%	2 9%	58 0%
1992	1 6%	1 1%	0 0%	4 3%	0 0%	1 6%	0 0%	12 5%	0 0%	1 1%	3 3%	6 5%	8 2%	2 2%	57 6%
1993	5 5%	0 4%	0 4%	5 8%	1 1%	0 7%	0 0%	11 6%	0 0%	1 1%	0 0%	8 0%	13 1%	1 5%	50 9%
1994	7 1%	1 2%	1 3%	5 9%	0 7%	0 7%	0 0%	7 4%	0 7%	2 8%	0 0%	0 5%	7 4%	0 8%	63 7%
2003	7 5%	0 0%	0 0%	0 5%	0 0%	0 0%	0 0%	1 2%	0 0%	0 0%	0 0%	6 3%	11 9%	6 1%	66 5%
2004	2 4%	0 0%	0 0%	1 5%	0 0%	0 0%	1 7%	1 6%	0 0%	0 0%	1 5%	5 4%	7 3%	4 4%	74 0%
2005	4 0%	0 2%	0 0%	3 5%	0 0%	0 0%	1 8%	3 5%	0 0%	0 0%	0 0%	4 2%	13 5%	5 7%	63 6%
(88-94)	4 4%	0 4%	0 6%	5 2%	0 3%	0 7%	0 0%	14 0%	0 1%	1 0%	0 6%	7 7%	17 2%	3 5%	44 6%
(03-05)	4 6%	0 1%	0 0%	1 8%	0 0%	0 0%	1 2%	2 1%	0 0%	0 0%	0 5%	5 3%	10 9%	5 4%	68 0%

Appendix E.65. Percent distribution of Lewis River Wild Chinook reported catch among fisheries and escapement.

									Other Fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Trl&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1981	6 4%	0 0%	0 0%	3 3%	1 4%	0 2%	2 1%	6 0%	0 0%	0 7%	0 0%	2 0%	4 2%	15 9%	57 8%
1982	6 0%	1 3%	0 2%	3 0%	1 4%	0 8%	0 0%	10 7%	0 4%	0 8%	0 0%	4 1%	6 2%	23 5%	41 7%
1986	4 9%	0 0%	0 0%	1 6%	2 2%	0 9%	0 0%	6 8%	0 0%	0 0%	2 5%	3 3%	26 6%	12 3%	39 0%
1987	4 1%	0 0%	0 0%	4 7%	1 3%	0 0%	0 0%	8 4%	0 0%	0 0%	0 9%	2 7%	25 7%	6 3%	46 0%
1988	4 4%	0 0%	0 0%	2 9%	0 0%	0 5%	0 0%	8 9%	0 0%	0 1%	0 0%	4 7%	23 1%	16 7%	38 7%
1989	1 8%	0 1%	0 2%	4 5%	0 2%	0 7%	0 5%	5 1%	0 0%	0 8%	0 5%	4 9%	9 5%	7 3%	64 0%
1990	5 4%	0 0%	0 0%	1 7%	0 4%	0 6%	0 6%	12 1%	0 0%	0 0%	0 8%	4 0%	3 3%	5 2%	65 8%
1991	6 0%	0 1%	0 0%	3 8%	0 5%	0 0%	1 1%	5 9%	0 0%	0 7%	0 0%	2 4%	15 8%	7 1%	56 6%
1992	1 6%	0 0%	0 0%	3 8%	1 8%	0 0%	0 7%	6 2%	0 0%	0 0%	0 0%	2 9%	4 5%	23 4%	55 1%
1993	3 6%	0 0%	1 0%	4 9%	0 0%	0 3%	0 0%	7 6%	0 0%	1 6%	0 0%	0 8%	6 8%	9 1%	64 3%
1994	6 4%	0 0%	0 0%	3 2%	0 0%	0 0%	0 0%	3 2%	0 0%	1 6%	0 0%	0 8%	1 6%	0 0%	83 2%
1995	6 6%	0 0%	2 3%	3 2%	0 0%	0 4%	0 0%	5 3%	0 0%	0 0%	0 0%	0 0%	0 0%	24 6%	57 6%
1996	7 7%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 8%	0 9%	4 6%	84 0%
1997	12 6%	0 0%	0 0%	3 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 6%	80 7%
1998	8 1%	0 0%	0 0%	3 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 0%	2 0%	84 8%
1999	11 8%	0 0%	0 0%	5 9%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	82 4%
2000	3 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	16 4%	3 0%	77 6%
2001	5 0%	0 0%	1 4%	0 0%	0 0%	0 0%	0 0%	8 6%	0 0%	0 0%	1 4%	5 9%	2 3%	5 5%	70 0%
2002	11 3%	0 0%	1 6%	0 0%	0 0%	0 0%	0 0%	6 0%	0 0%	0 0%	5 8%	5 2%	4 9%	4 7%	60 4%
2003	9 4%	0 0%	0 0%	1 5%	0 0%	0 0%	1 1%	5 0%	0 0%	0 0%	1 1%	9 4%	6 8%	6 8%	59 0%
2004	6 0%	0 0%	0 5%	3 0%	0 0%	0 0%	0 8%	2 2%	0 0%	0 0%	0 0%	0 7%	2 5%	2 0%	82 4%
2005	4 2%	0 0%	0 0%	12 2%	0 0%	0 0%	3 9%	4 2%	0 0%	0 0%	0 0%	1 7%	11 9%	10 8%	51 2%
(81-82)	6 2%	0 7%	0 1%	3 2%	1 4%	0 5%	1 1%	8 4%	0 2%	0 8%	0 0%	3 1%	5 2%	19 7%	49 8%
(86-98)	5 6%	0 0%	0 3%	3 1%	0 5%	0 3%	0 2%	5 3%	0 0%	0 4%	0 4%	2 3%	9 2%	9 4%	63 1%
(99-05)	7 2%	0 0%	0 5%	3 2%	0 0%	0 0%	0 8%	3 7%	0 0%	0 0%	1 2%	3 3%	6 4%	4 7%	69 0%

Appendix E.66. Percent distribution of Lewis River Wild Chinook total fishing mortalities among fisheries and escapement.

										Other fisheries					
Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	GeoSt Tr&Sp	Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1981	7 4%	0 0%	0 0%	3 8%	1 6%	0 2%	2 1%	7 5%	0 0%	0 7%	0 0%	2 5%	4 2%	16 8%	53 1%
1982	7 4%	1 2%	0 2%	3 5%	1 6%	0 7%	0 0%	11 7%	0 4%	0 7%	0 0%	4 2%	6 0%	23 5%	38 8%
1986	6 4%	0 0%	0 0%	2 2%	2 2%	1 0%	0 0%	8 0%	0 0%	0 0%	2 6%	3 8%	25 5%	12 3%	36 0%
1987	5 7%	0 0%	0 0%	5 3%	1 4%	0 0%	0 0%	9 5%	0 0%	0 0%	0 9%	2 9%	24 9%	6 6%	42 7%
1988	5 2%	0 0%	0 0%	3 5%	0 0%	0 5%	0 0%	10 7%	0 0%	0 1%	0 0%	5 0%	21 9%	17 7%	35 4%
1989	2 4%	0 2%	0 3%	5 1%	0 2%	0 7%	0 4%	5 9%	0 0%	0 8%	0 5%	5 4%	9 4%	7 9%	60 7%
1990	7 8%	0 0%	0 0%	1 9%	0 5%	0 7%	0 6%	13 3%	0 0%	0 0%	0 8%	4 2%	3 2%	5 5%	61 5%
1991	7 0%	0 3%	0 0%	4 1%	0 4%	0 0%	1 2%	6 4%	0 0%	0 7%	0 0%	2 5%	15 4%	7 7%	54 2%
1992	1 7%	0 0%	0 0%	4 3%	1 9%	0 0%	0 7%	6 7%	0 0%	0 0%	0 0%	3 1%	4 5%	24 9%	52 2%
1993	4 4%	0 0%	1 2%	5 7%	0 0%	0 2%	0 0%	8 4%	0 0%	1 5%	0 0%	1 5%	6 7%	9 4%	61 0%
1994	9 4%	0 0%	0 0%	4 9%	0 0%	0 0%	0 0%	3 8%	0 0%	1 5%	0 0%	0 8%	1 5%	0 0%	78 2%
1995	7 8%	0 0%	2 3%	3 9%	0 0%	0 5%	0 0%	6 4%	0 0%	0 2%	0 0%	0 0%	0 0%	25 3%	53 7%
1996	9 1%	0 0%	0 0%	0 3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 7%	0 9%	4 8%	82 2%
1997	14 0%	0 0%	0 0%	3 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 9%	78 9%
1998	8 1%	0 0%	0 0%	3 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 0%	2 0%	84 8%
1999	18 3%	0 0%	1 7%	5 0%	0 0%	0 0%	0 0%	1 7%	0 0%	0 0%	1 7%	1 7%	0 0%	0 0%	70 0%
2000	6 8%	0 0%	1 4%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 7%	15 1%	2 7%	71 2%
2001	6 0%	0 0%	1 7%	0 0%	0 0%	0 0%	0 0%	9 0%	0 0%	0 0%	2 1%	6 4%	2 1%	6 4%	66 1%
2002	14 4%	0 0%	1 8%	0 0%	0 0%	0 0%	0 0%	5 8%	0 0%	0 0%	6 3%	6 6%	4 8%	4 8%	55 6%
2003	10 3%	0 0%	0 0%	1 7%	0 0%	0 0%	1 3%	5 0%	0 0%	0 0%	1 3%	10 3%	6 7%	6 9%	56 6%
2004	6 7%	0 0%	0 5%	3 2%	0 0%	0 0%	1 1%	2 2%	0 0%	0 0%	0 0%	0 8%	2 4%	2 1%	81 1%
2005	4 3%	0 0%	0 0%	13 0%	0 0%	0 0%	4 8%	4 0%	0 0%	0 0%	0 0%	1 9%	11 7%	11 2%	49 2%
(81-82)	7 4%	0 6%	0 1%	3 7%	1 6%	0 5%	1 1%	9 6%	0 2%	0 7%	0 0%	3 4%	5 1%	20 2%	46 0%
(86-98)	6 8%	0 0%	0 3%	3 6%	0 5%	0 3%	0 2%	6 1%	0 0%	0 4%	0 4%	2 5%	8 9%	9 8%	60 1%
(99-05)	9 5%	0 0%	1 0%	3 3%	0 0%	0 0%	1 0%	4 0%	0 0%	0 0%	1 6%	4 3%	6 1%	4 9%	64 3%

Appendix E.67. Percent distribution of Salmon River Chinook reported catch among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	N/CBC Net	N/CBC Sport	WCVI Troll	Geo/St Trk/Sp	Other Fisheries					Escapement
										Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	
1981	13 9%	0 0%	0 4%	28 2%	0 6%	1 8%	0 0%	3 7%	0 0%	0 0%	0 7%	1 3%	0 0%	17 1%	32 2%
1982	10 4%	1 5%	0 9%	14 4%	1 1%	0 8%	0 0%	7 0%	0 0%	0 0%	0 0%	2 6%	0 0%	21 4%	39 9%
1983	20 6%	0 6%	0 0%	21 5%	0 6%	0 0%	0 0%	10 4%	0 0%	0 0%	0 0%	0 0%	0 0%	15 6%	30 6%
1984	10 5%	0 0%	0 0%	16 9%	3 5%	0 4%	0 0%	3 4%	0 0%	0 8%	0 0%	0 3%	0 4%	21 5%	42 4%
1985	11 9%	6 5%	0 0%	19 1%	1 1%	0 3%	0 0%	1 5%	0 0%	0 0%	0 0%	0 0%	0 0%	19 9%	39 8%
1986	15 2%	0 0%	0 0%	9 0%	4 7%	0 6%	0 0%	2 1%	0 0%	0 0%	0 0%	0 0%	0 0%	16 2%	52 1%
1987	10 4%	0 0%	0 0%	15 3%	0 4%	0 0%	0 0%	2 4%	0 0%	0 0%	0 0%	2 6%	0 0%	24 1%	44 8%
1988	9 6%	0 0%	0 0%	6 4%	0 6%	0 0%	0 0%	3 9%	0 0%	0 0%	0 0%	0 8%	0 0%	16 0%	62 7%
1989	8 4%	0 0%	0 0%	11 4%	0 0%	0 2%	0 0%	3 9%	0 0%	1 2%	0 0%	3 4%	0 0%	24 7%	46 8%
1990	11 9%	0 7%	0 0%	10 6%	0 3%	0 7%	1 3%	7 8%	0 0%	0 3%	0 0%	3 0%	0 0%	25 6%	37 9%
1991	18 4%	0 0%	0 5%	15 2%	0 1%	0 7%	0 8%	5 8%	0 0%	0 0%	0 0%	0 2%	0 0%	24 9%	33 4%
1992	2 6%	0 2%	0 0%	6 6%	0 8%	0 4%	1 8%	15 4%	0 0%	0 0%	0 0%	1 8%	0 0%	16 0%	54 3%
1993	7 7%	0 2%	0 2%	15 3%	0 2%	0 0%	1 1%	17 8%	0 0%	0 5%	0 0%	3 2%	0 0%	23 0%	30 8%
1994	8 8%	0 2%	1 0%	14 8%	0 2%	0 1%	2 1%	4 6%	0 0%	0 0%	0 0%	1 5%	0 0%	17 7%	49 0%
1995	6 8%	0 2%	0 3%	4 6%	0 1%	0 1%	1 0%	0 9%	0 0%	0 0%	0 2%	0 1%	0 0%	30 5%	55 3%
1996	11 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	4 7%	0 0%	52 6%	31 5%
1997	27 7%	0 0%	1 6%	3 3%	0 1%	0 0%	0 4%	0 2%	0 0%	0 0%	0 0%	1 4%	0 0%	19 1%	46 1%
1998	10 4%	0 4%	0 4%	11 1%	0 0%	0 0%	0 8%	0 0%	0 0%	0 0%	0 0%	0 2%	0 1%	32 4%	44 2%
1999	12 3%	0 4%	0 0%	2 7%	0 0%	0 0%	3 3%	0 0%	0 0%	0 0%	0 0%	0 5%	0 0%	35 8%	45 1%
2000	12 8%	0 0%	0 5%	2 2%	0 0%	0 0%	1 4%	0 0%	0 0%	0 0%	0 0%	0 3%	0 0%	20 9%	61 7%
2001	12 3%	0 0%	0 7%	2 6%	0 0%	0 0%	2 0%	0 3%	0 0%	0 0%	0 1%	2 5%	0 1%	26 8%	52 6%
2002	18 3%	0 0%	0 9%	2 9%	0 0%	0 0%	1 6%	0 1%	0 0%	0 0%	0 0%	1 6%	0 0%	37 1%	37 5%
2003	12 9%	0 6%	0 6%	5 9%	0 0%	0 0%	1 6%	0 0%	0 0%	0 0%	0 2%	1 4%	0 0%	35 3%	41 4%
2004	18 3%	0 8%	0 9%	7 3%	0 0%	0 0%	3 5%	1 2%	0 0%	0 0%	0 0%	0 6%	0 0%	24 2%	43 3%
2005	19 6%	0 0%	1 2%	8 4%	0 0%	0 0%	5 6%	2 4%	0 0%	0 0%	0 2%	1 3%	0 1%	31 4%	29 7%
(81-84)	13 9%	0 5%	0 3%	20 3%	1 5%	0 8%	0 0%	6 1%	0 0%	0 2%	0 2%	1 1%	0 1%	18 9%	36 3%
(85-98)	11 5%	0 6%	0 3%	10 2%	0 6%	0 2%	0 7%	4 7%	0 0%	0 1%	0 0%	1 6%	0 0%	24 5%	44 9%
(99-05)	15 2%	0 3%	0 7%	4 6%	0 0%	0 0%	2 7%	0 6%	0 0%	0 0%	0 1%	1 2%	0 0%	30 2%	44 5%

Appendix E.68. Percent distribution of Salmon River Chinook total fishing mortalities among fisheries and escapement.

Catch Year	Alaska Troll	Alaska Net	Alaska Sport	North Troll	Central Troll	NCBC Net	NCBC Sport	WCVI Troll	Gwaii Troll/Sp	Other Fisheries: Canada Net	Canada Sport	U.S. Troll	U.S. Net	U.S. Sport	Escapement
1981	15.8%	0.0%	0.4%	29.9%	1.0%	1.8%	0.0%	4.7%	0.0%	0.0%	0.6%	1.4%	0.0%	16.4%	27.9%
1982	14.2%	1.8%	0.9%	17.7%	1.4%	0.6%	0.0%	7.4%	0.0%	0.0%	0.0%	2.3%	0.0%	20.2%	33.4%
1983	26.3%	0.7%	0.0%	22.1%	0.7%	0.0%	0.0%	10.1%	0.0%	0.0%	0.0%	0.0%	0.0%	14.1%	26.0%
1984	11.8%	0.0%	0.0%	17.9%	3.4%	0.4%	0.0%	3.5%	0.0%	0.7%	0.0%	0.2%	0.4%	22.3%	39.4%
1985	14.5%	11.8%	0.0%	17.7%	1.1%	0.2%	0.0%	1.6%	0.0%	0.0%	0.0%	0.1%	0.0%	20.3%	32.5%
1986	22.0%	0.0%	0.0%	11.1%	4.3%	0.5%	0.0%	3.0%	0.0%	0.0%	0.0%	0.5%	0.0%	15.7%	42.9%
1987	17.7%	0.0%	0.0%	15.5%	0.5%	0.0%	0.0%	2.7%	0.0%	0.0%	0.0%	2.5%	0.0%	22.5%	38.6%
1988	15.0%	0.0%	0.0%	8.7%	0.9%	0.0%	0.0%	5.3%	0.0%	0.0%	0.0%	0.9%	0.0%	15.5%	53.6%
1989	18.9%	0.0%	0.0%	16.0%	0.0%	0.1%	0.0%	4.5%	0.0%	1.0%	0.0%	3.2%	0.0%	21.6%	34.6%
1990	18.8%	2.0%	0.0%	12.8%	0.3%	0.6%	1.2%	7.9%	0.0%	0.2%	0.0%	2.9%	0.0%	23.2%	30.2%
1991	24.1%	0.0%	0.5%	16.4%	0.1%	0.7%	0.8%	6.1%	0.1%	0.0%	0.0%	0.2%	0.0%	23.1%	28.0%
1992	5.0%	0.8%	0.0%	8.6%	0.9%	0.3%	2.1%	17.7%	0.0%	0.0%	0.0%	2.0%	0.0%	15.9%	46.8%
1993	11.2%	0.6%	0.2%	17.2%	0.2%	0.0%	1.0%	18.8%	0.0%	0.4%	0.0%	3.2%	0.0%	22.1%	25.1%
1994	16.3%	0.4%	1.0%	14.9%	0.2%	0.1%	2.1%	4.7%	0.0%	0.0%	0.0%	1.3%	0.0%	16.8%	42.2%
1995	10.3%	0.3%	0.4%	6.7%	0.2%	0.1%	1.4%	1.2%	0.0%	0.0%	0.2%	0.1%	0.0%	30.8%	48.3%
1996	20.5%	0.0%	0.0%	2.7%	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%	0.0%	3.9%	0.0%	47.7%	24.6%
1997	32.2%	0.0%	1.7%	3.4%	0.1%	0.0%	0.5%	0.2%	0.0%	0.0%	0.0%	1.5%	0.0%	18.9%	41.5%
1998	11.8%	1.2%	0.5%	11.8%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.2%	0.1%	32.8%	40.6%
1999	17.7%	0.8%	0.0%	2.9%	0.0%	0.0%	4.4%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%	34.8%	38.7%
2000	17.4%	0.0%	0.7%	2.6%	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	21.9%	55.1%
2001	17.0%	0.0%	1.0%	3.0%	0.0%	0.0%	2.9%	0.2%	0.0%	0.0%	0.1%	2.8%	0.1%	26.6%	46.3%
2002	22.6%	0.0%	1.2%	3.2%	0.0%	0.0%	2.1%	0.1%	0.0%	0.0%	0.0%	1.7%	0.0%	37.3%	31.9%
2003	15.1%	2.3%	0.7%	6.5%	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%	0.2%	1.5%	0.0%	35.2%	36.5%
2004	21.1%	2.6%	0.9%	7.7%	0.0%	0.0%	4.6%	1.1%	0.0%	0.0%	0.0%	0.6%	0.0%	23.5%	38.0%
2005	21.0%	0.0%	1.2%	8.6%	0.0%	0.0%	6.6%	2.3%	0.0%	0.0%	0.2%	1.3%	0.1%	31.5%	27.2%
(81-84)	17.0%	0.6%	0.3%	21.9%	1.6%	0.7%	0.0%	6.4%	0.0%	0.2%	0.2%	1.0%	0.1%	18.3%	31.7%
(85-98)	17.0%	1.2%	0.3%	11.7%	0.6%	0.2%	0.7%	5.3%	0.0%	0.1%	0.0%	1.6%	0.0%	23.4%	37.8%
(99-05)	18.8%	0.8%	0.8%	4.9%	0.0%	0.0%	3.5%	0.5%	0.0%	0.0%	0.1%	1.3%	0.0%	30.1%	39.1%

Appendix F. Total mortality and landed catch exploitation rates [1] for exploitation rate indicator stocks[2] for complete broods up to 2001.

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[1] Ocean exploitation rates based only on ocean fisheries are shown for stocks in which terminal fisheries differentially impact the coded-wire tagged indicator compared to the associated wild stock. Total exploitation rates based on ocean plus terminal fisheries are shown for stocks in which fishery impacts on the indicator and the associated wild stock are similar in terminal areas. Exploitation rates are not shown for the following hatchery stocks because they are not associated with a wild stock: University of Washington Accelerated, South Puget Sound Fall Yearling, Squaxin Pens Fall Yearling. Exploitation rates cannot be calculated for the following stocks without sufficient escapement data: Nisqually Fall Fingerling, White River Spring Yearling, Elwha Fall Fingerling.

[2] The corresponding stocks used in the Chinook model calibration are indicated in brackets.

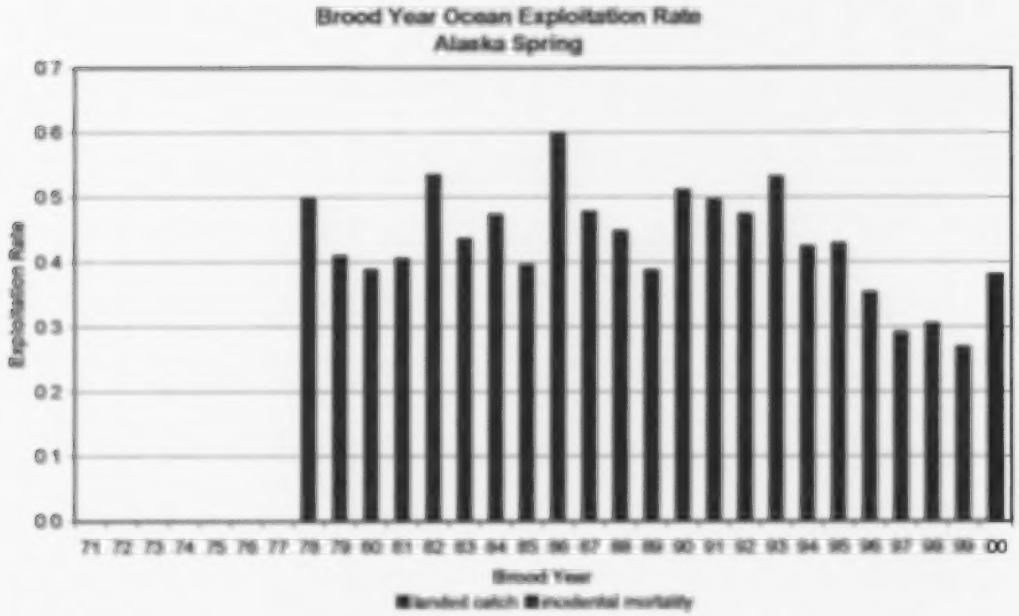

Figure F.1. Alaska spring (Alaska South SE) total exploitation rates by brood year.

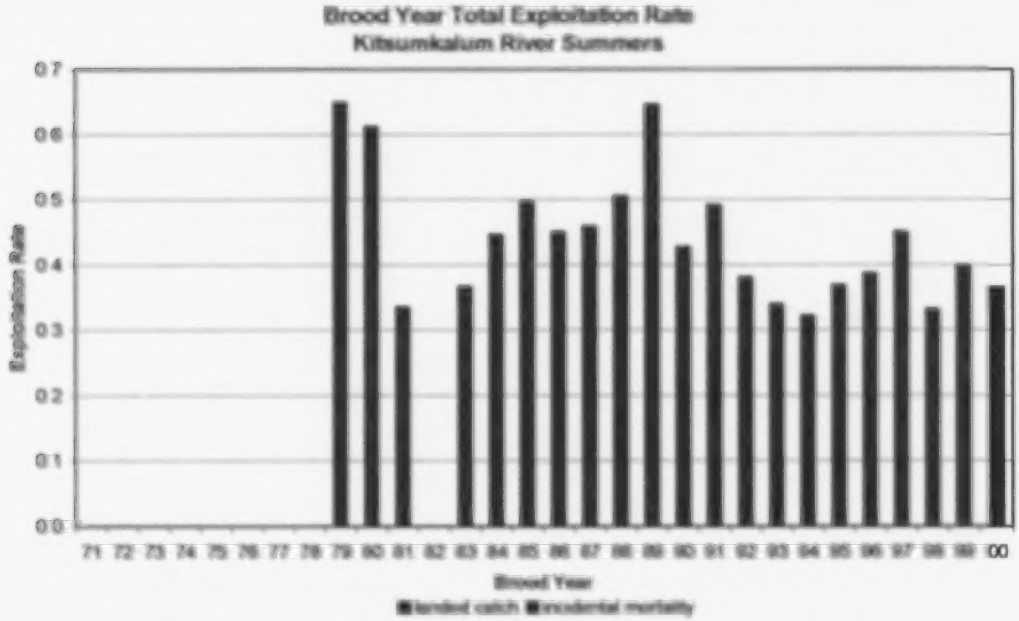

Figure F.2. Kitsumkalum River Summers (North/Central BC) total exploitation rates by brood year.

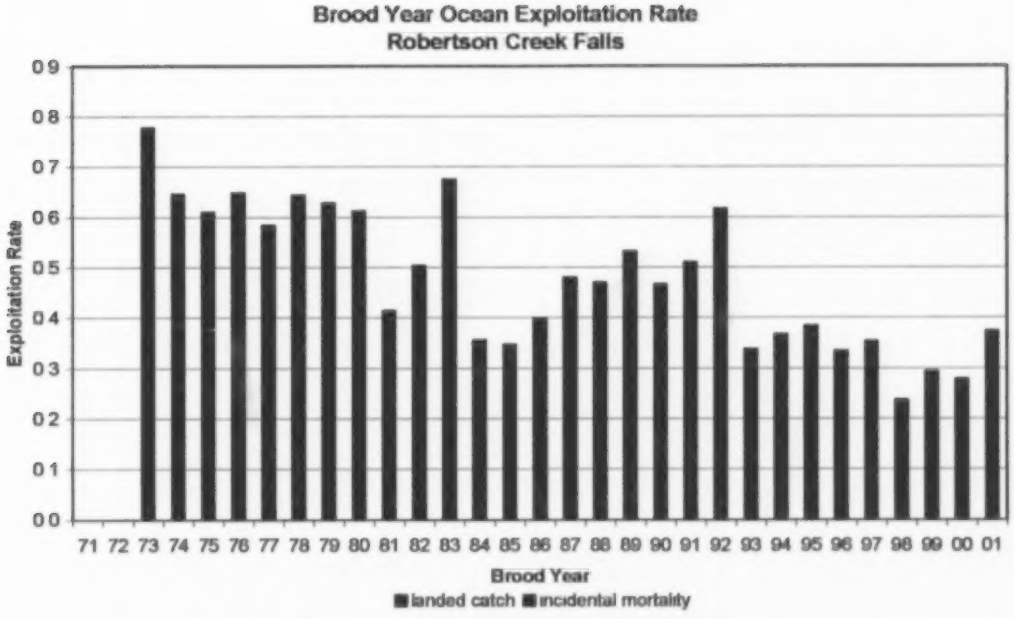

Figure F.3. Robertson Creek Falls (West Coast Vancouver Island Hatchery and Natural) ocean exploitation rates by brood year.

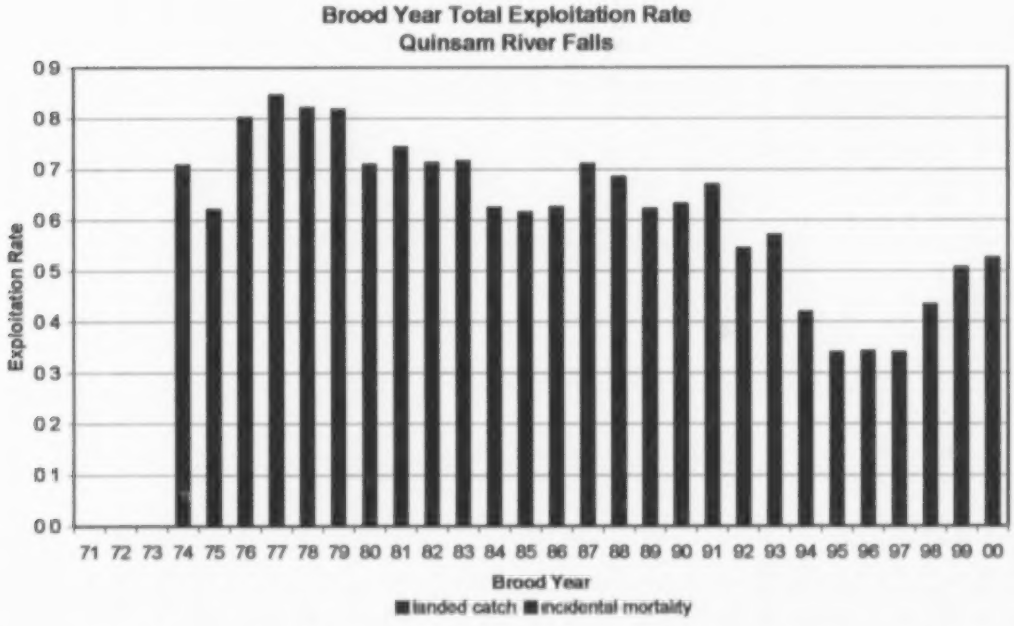

Figure F.4. Quinsam River Falls (Upper Strait of Georgia) total exploitation rates by brood year.

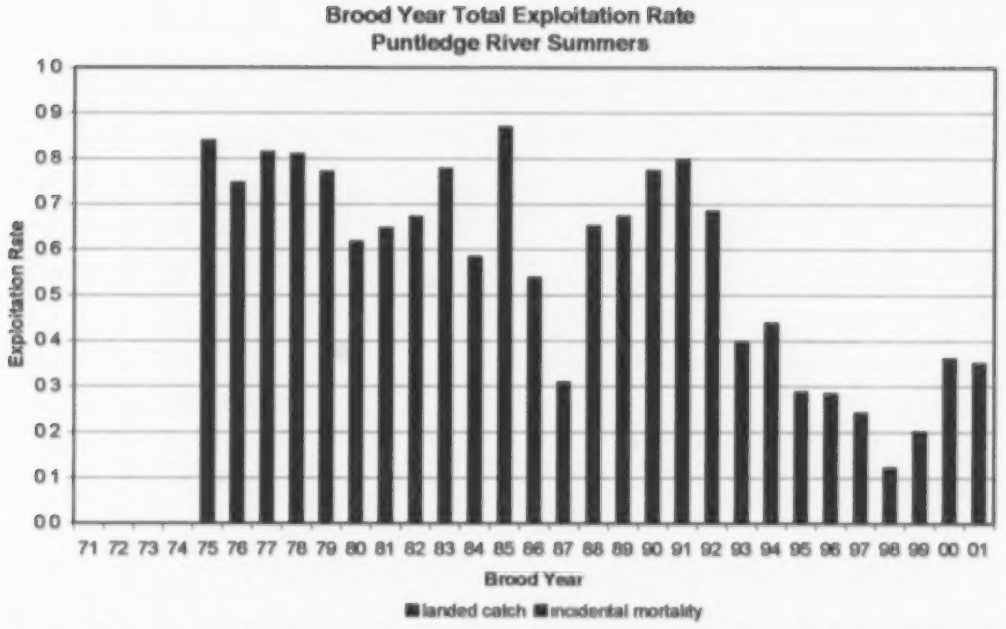
Brood Year Total Exploitation Rate
Puntledge River Summers
Exploitation Rate
00 01 02 03 04 05 06 07 08 09 10
71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 01
Brood Year
landed catch
incidental mortality

Figure F.5. Puntledge River Summers (Lower Strait of Georgia Hatchery) total exploitation rates by brood year.

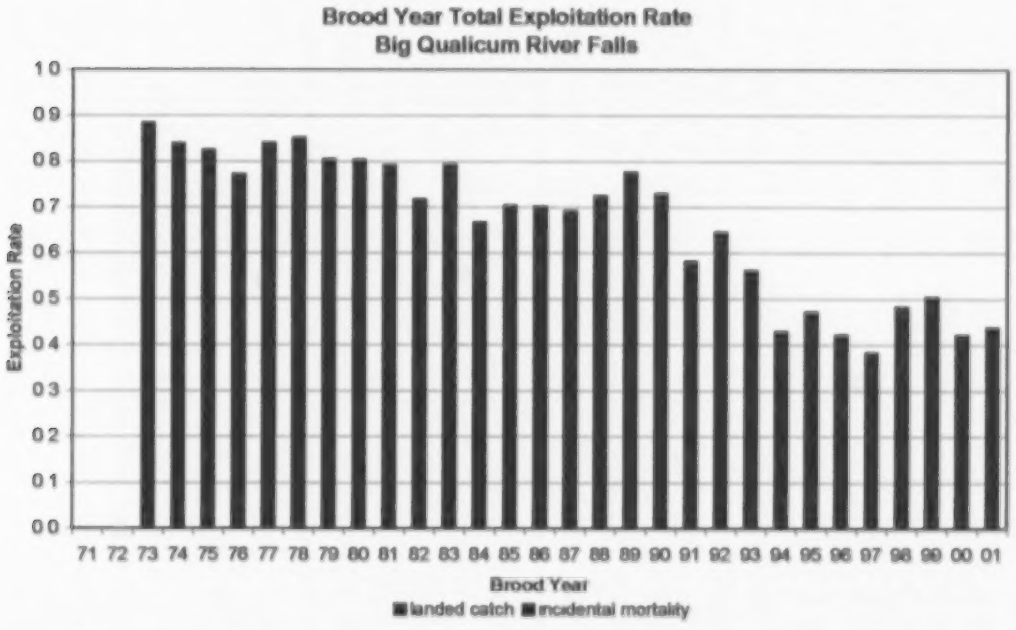
Brood Year Total Exploitation Rate
Big Qualicum River Falls
Exploitation Rate
00 01 02 03 04 05 06 07 08 09 10
71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 01
Brood Year
landed catch
incidental mortality

Figure F.6. Big Qualicum River Falls (Lower Strait of Georgia Hatchery and Natural) total exploitation rates by brood year.

Figure F.7. Cowichan River Falls (Lower Strait of Georgia Natural) total exploitation rates by brood year.

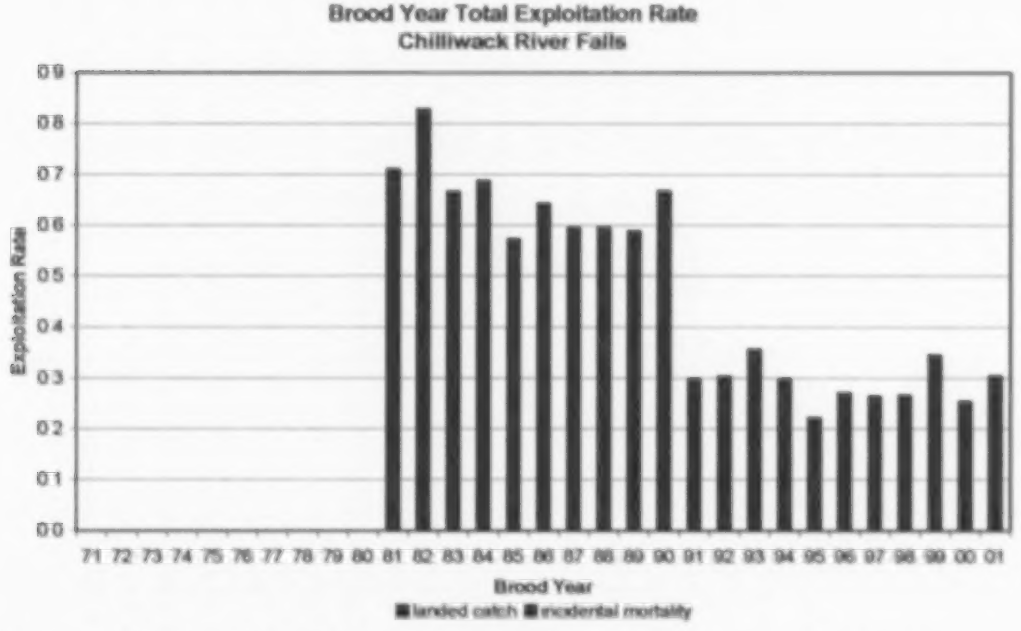

Figure F.8. Chilliwack River Falls (Fraser Late) total exploitation rates by brood year.

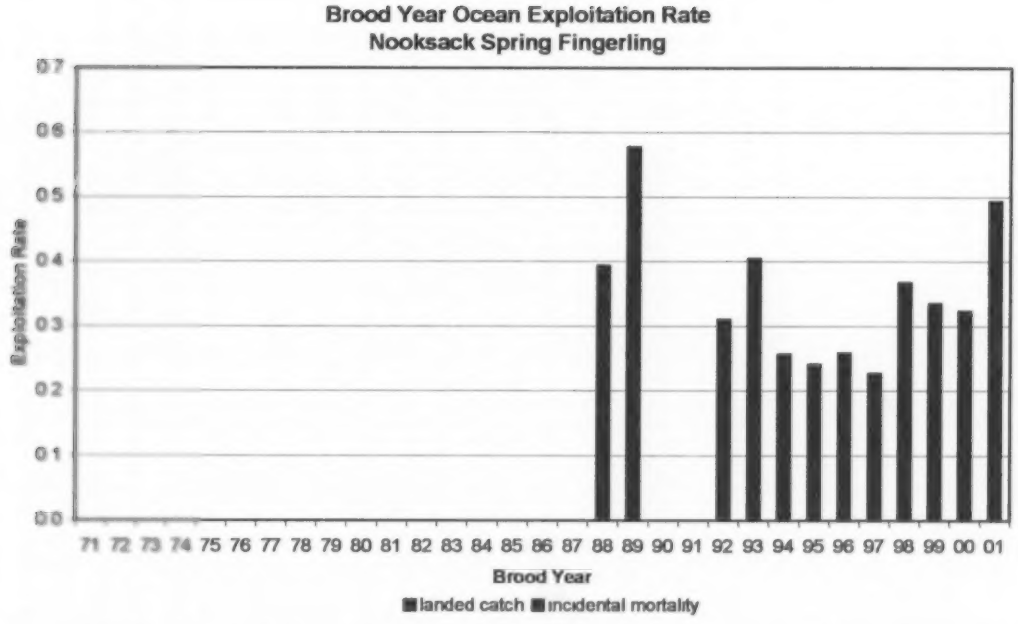

Figure F.9. Nooksack Spring Fingerling (Nooksack Spring) ocean exploitation rates by brood year.

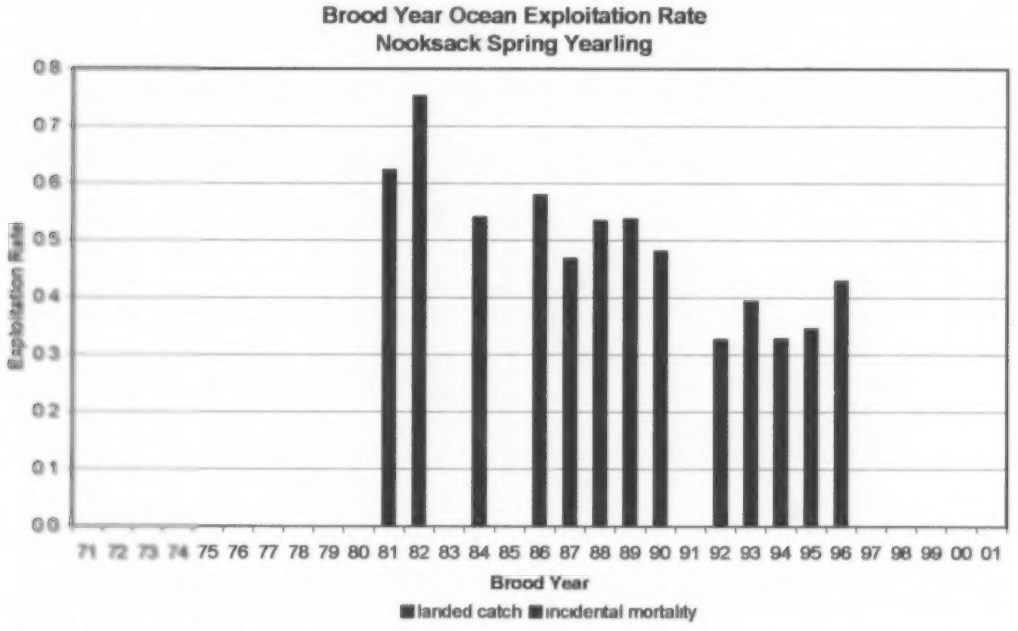

Figure F.10. Nooksack Spring Yearling (Nooksack Spring) ocean exploitation rates by brood year.

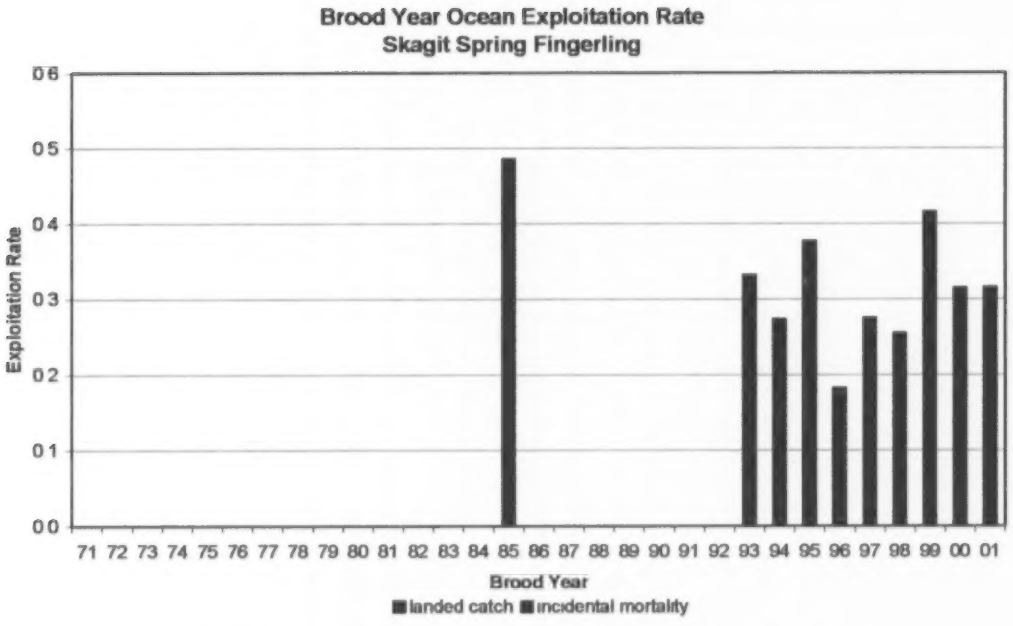

Figure F.11. Skagit Spring Fingerling ocean exploitation rates by brood year.

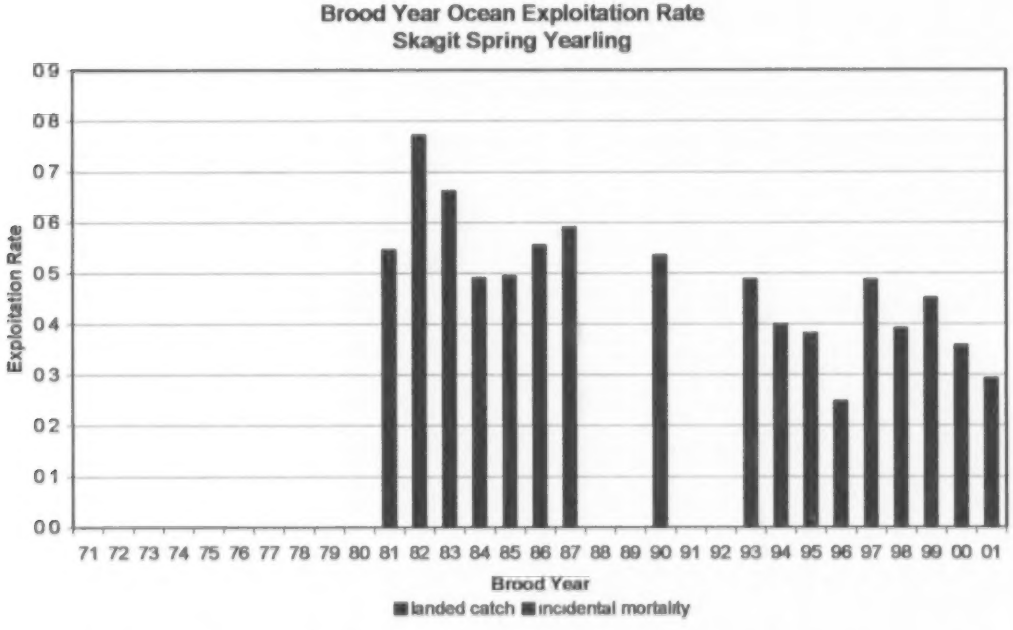

Figure F.12. Skagit Spring Yearling ocean exploitation rates by brood year.

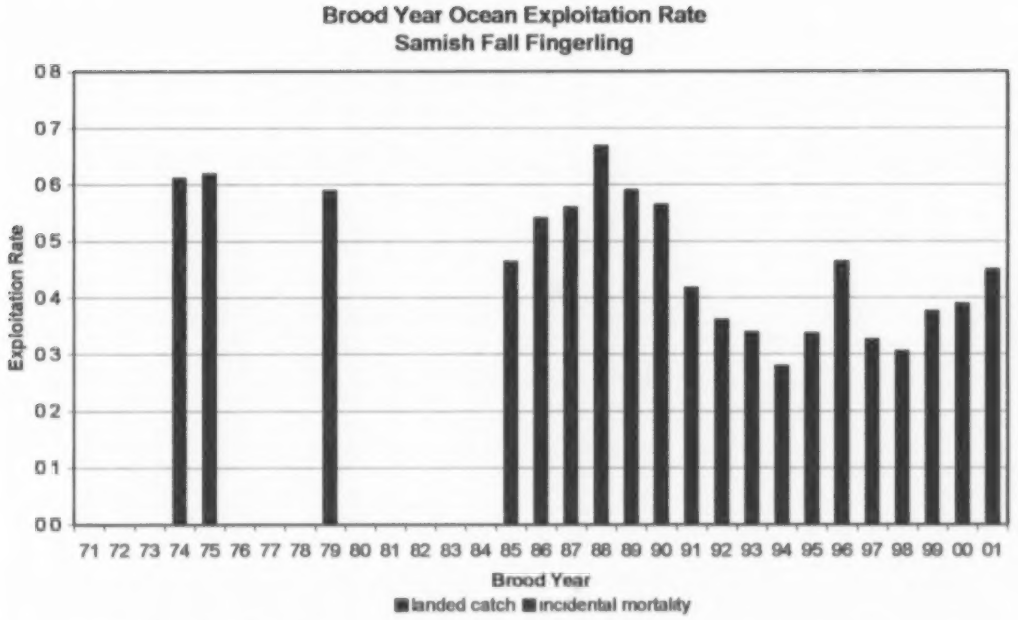

Figure F.13. Samish Fall Fingerling (Samish Fall) ocean exploitation rates by brood year.

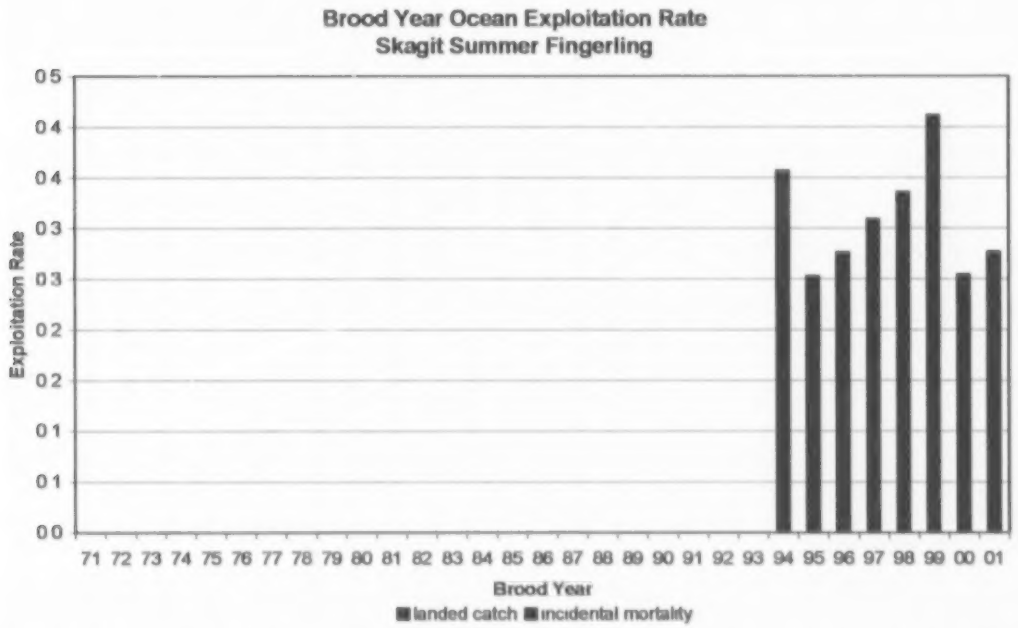

Figure F.14. Skagit Summer Fingerling (Skagit Wild) ocean exploitation rates by brood year.

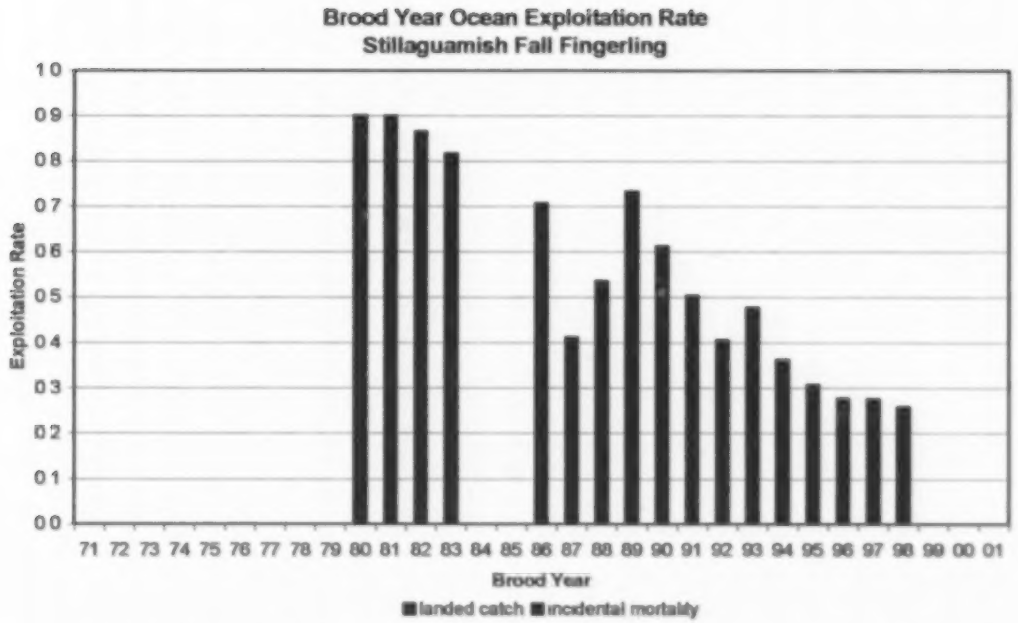

Figure F.15. Stillaguamish Fall Fingerling (Stillaguamish Wild) ocean exploitation rates by brood year.

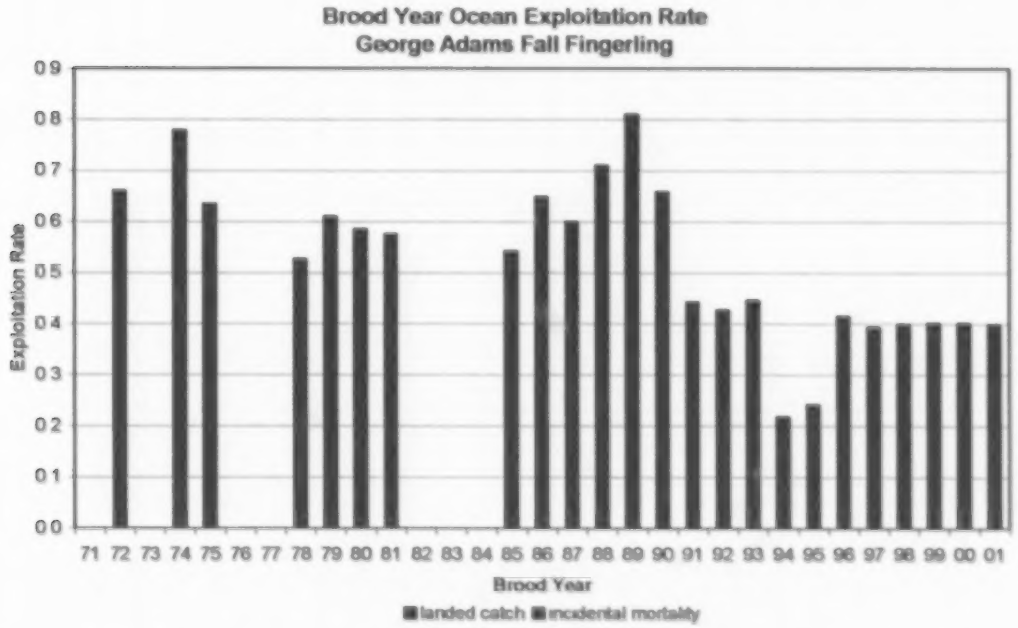

Figure F.16. George Adams Fall Fingerling ocean exploitation rates by brood year.

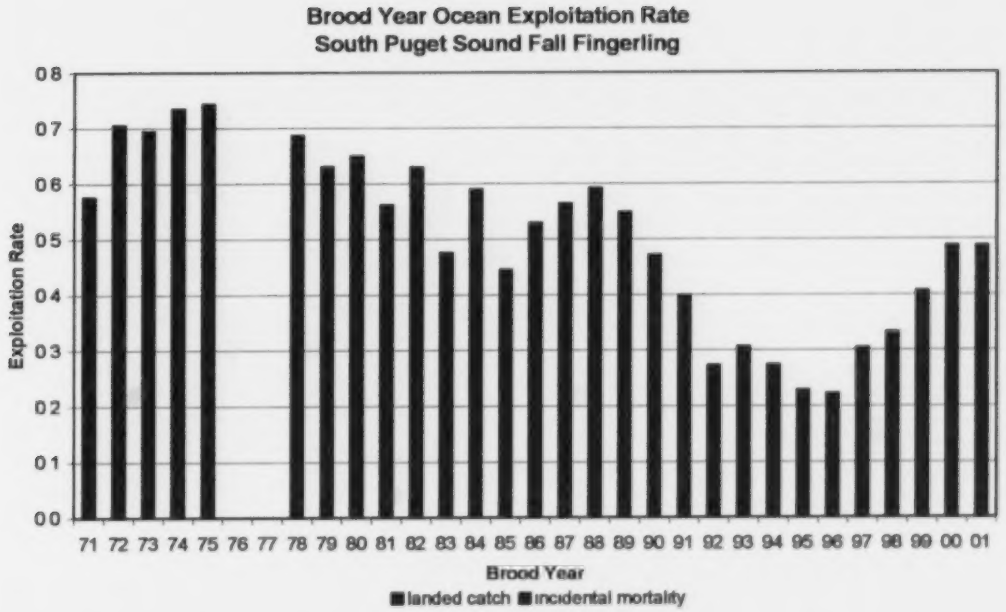

Figure F.17. South Puget Sound Fall Fingerling (Puget Sound Hatchery Fingerling) ocean exploitation rates by brood year.

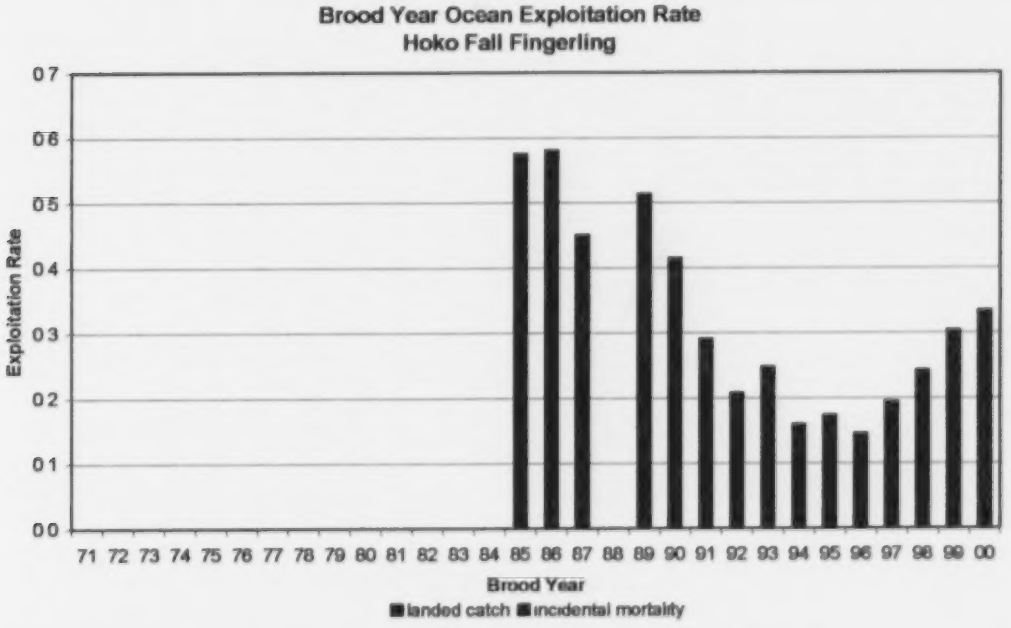

Figure F.18. Hoko Fall Fingerling ocean exploitation rates by brood year.

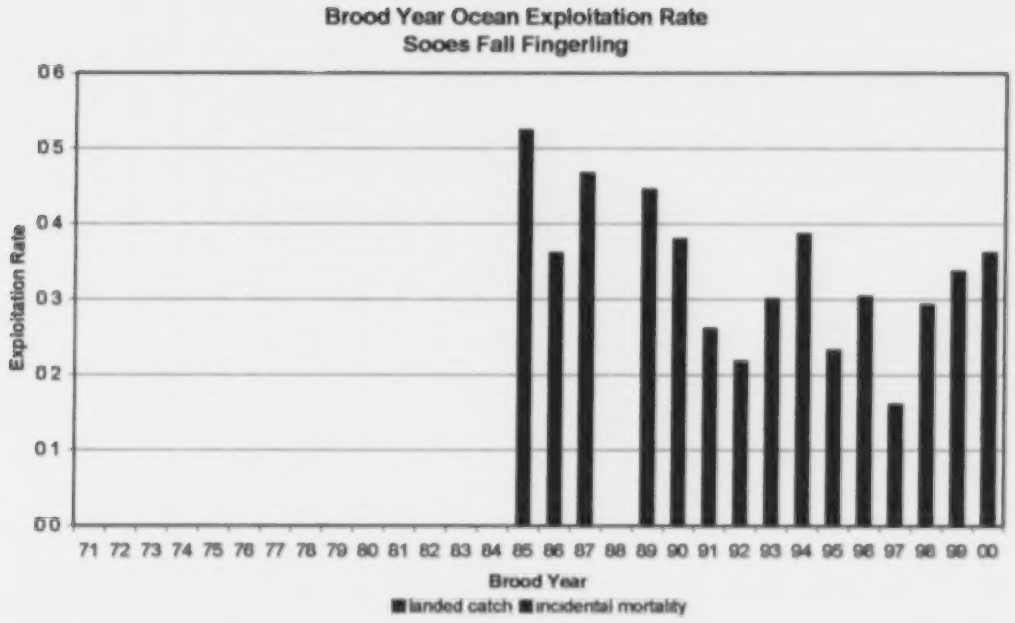

Figure F.19. Sooes Fall Fingerling (Washington Coastal Wild) ocean exploitation rates by brood year.

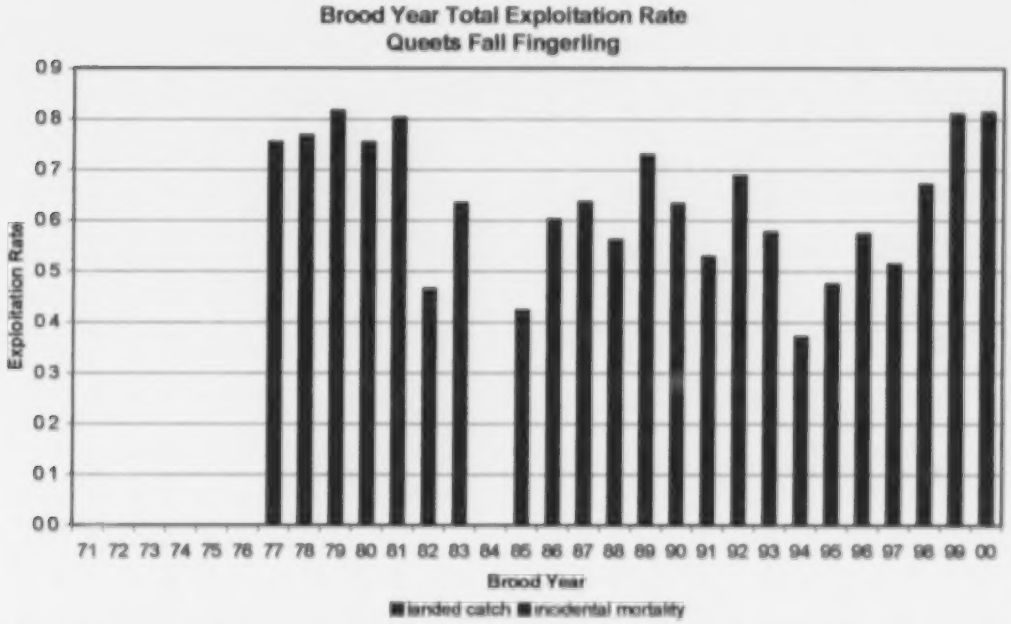

Figure F.20. Queets Fall Fingerling (Washington Coastal Wild) total exploitation rates by brood year.

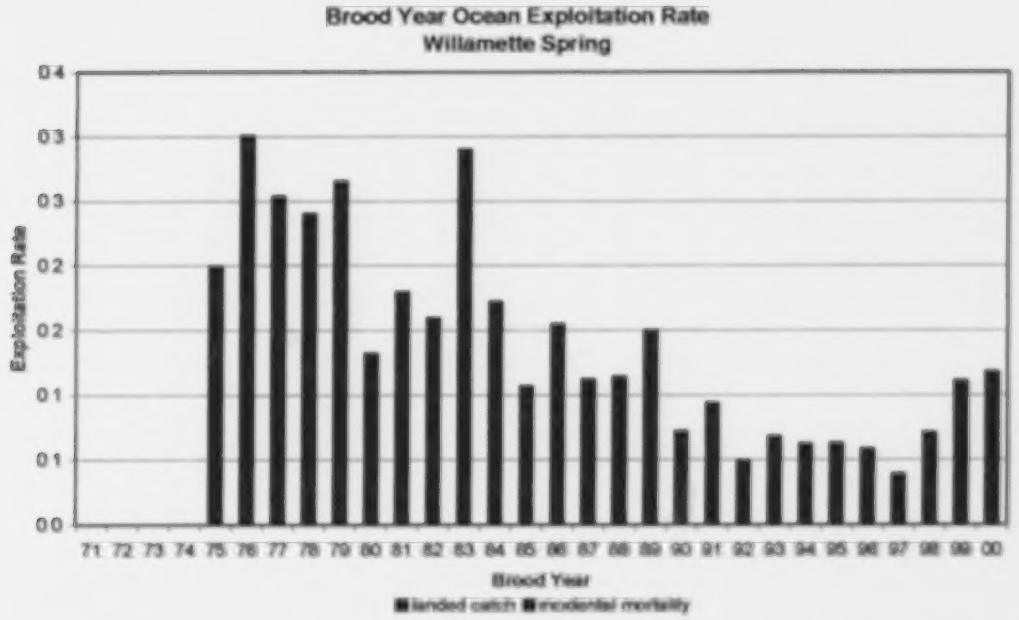

Figure F.21. Willamette Spring (Willamette River Hatchery) ocean exploitation rates by brood year.

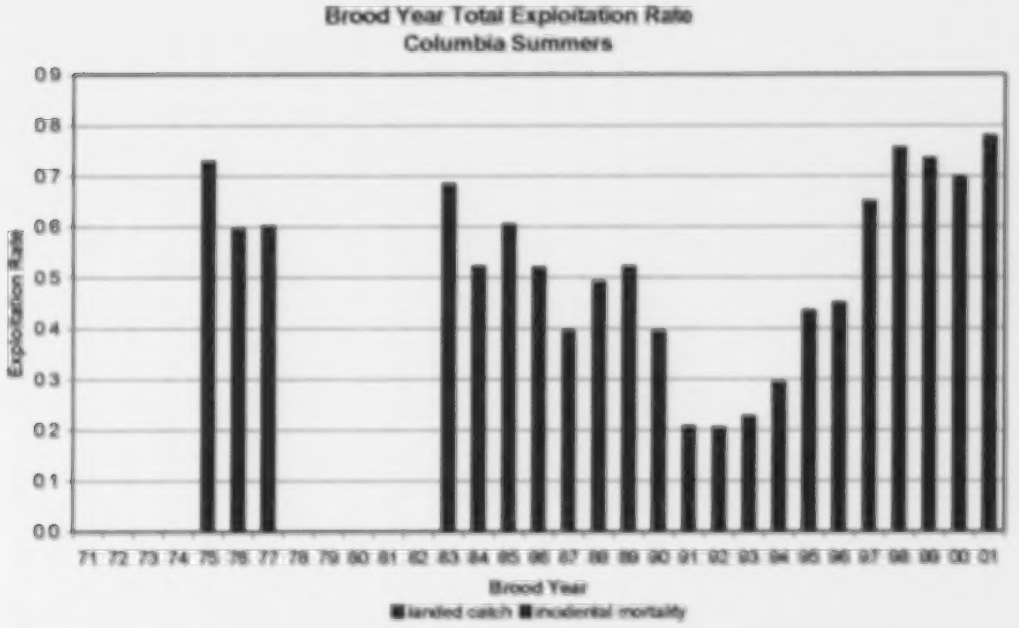

Figure F.22. Columbia Summers (Columbia River Summer) total exploitation rates by brood year.

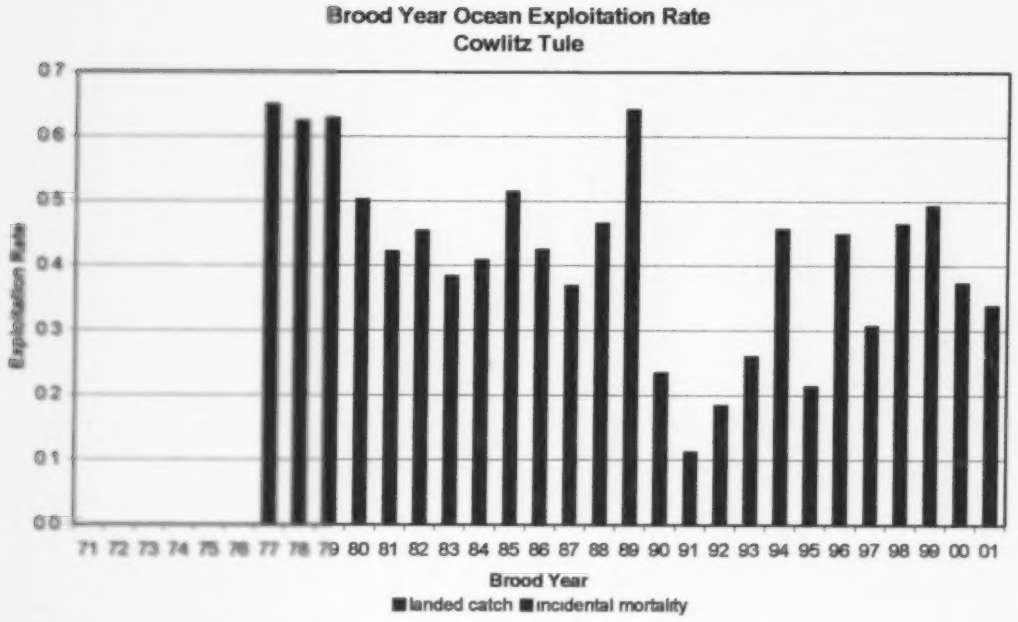

Figure F.23. Cowlitz Tule (Fall Cowlitz Hatchery) ocean exploitation rates by brood year.

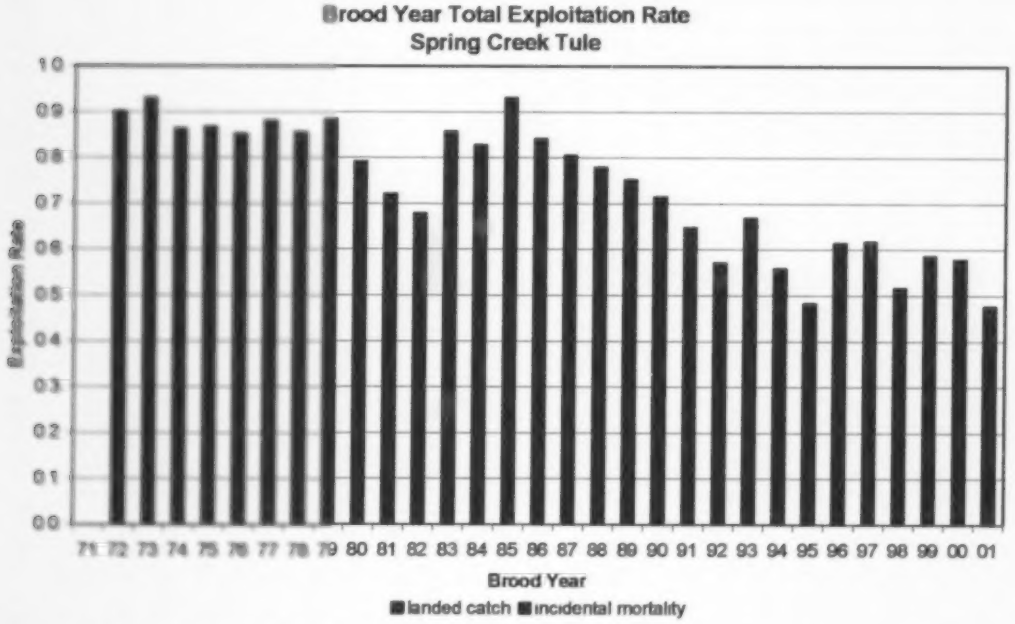

Figure F.24. Spring Creek Tule (Spring Creek Hatchery) total exploitation rates by brood year.

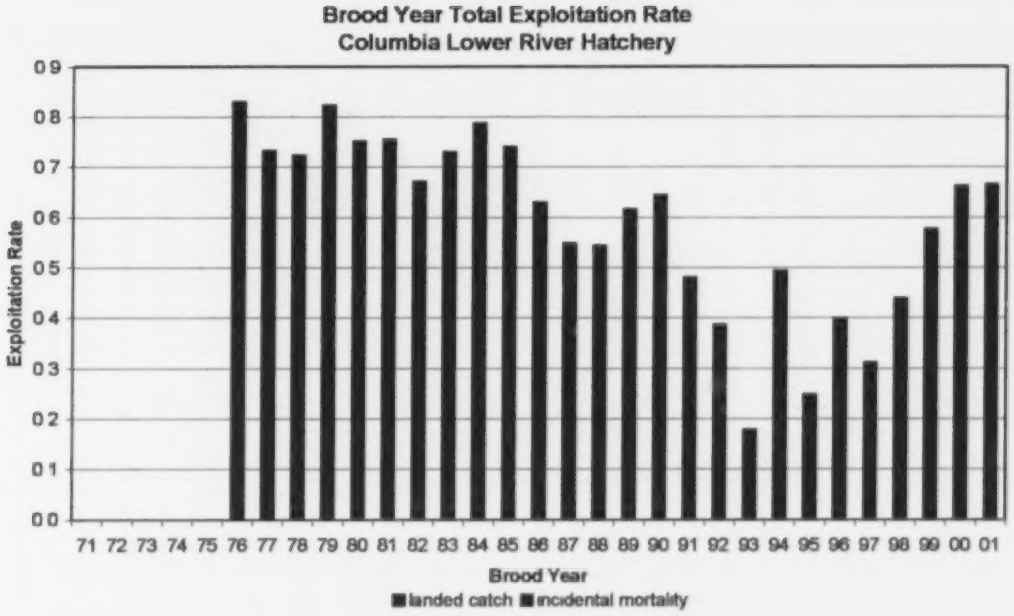

Figure F.25. Columbia Lower River Hatchery (Lower Bonneville Hatchery) total exploitation rates by brood year.

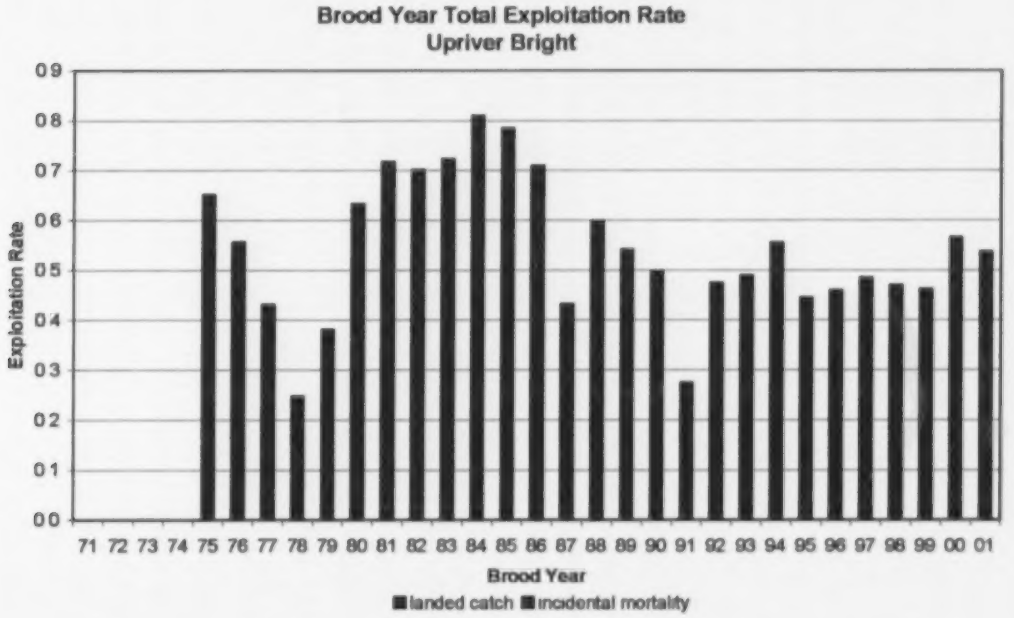

Figure F.26. Upriver Bright (Columbia River Upriver Brights) total exploitation rates by brood year.

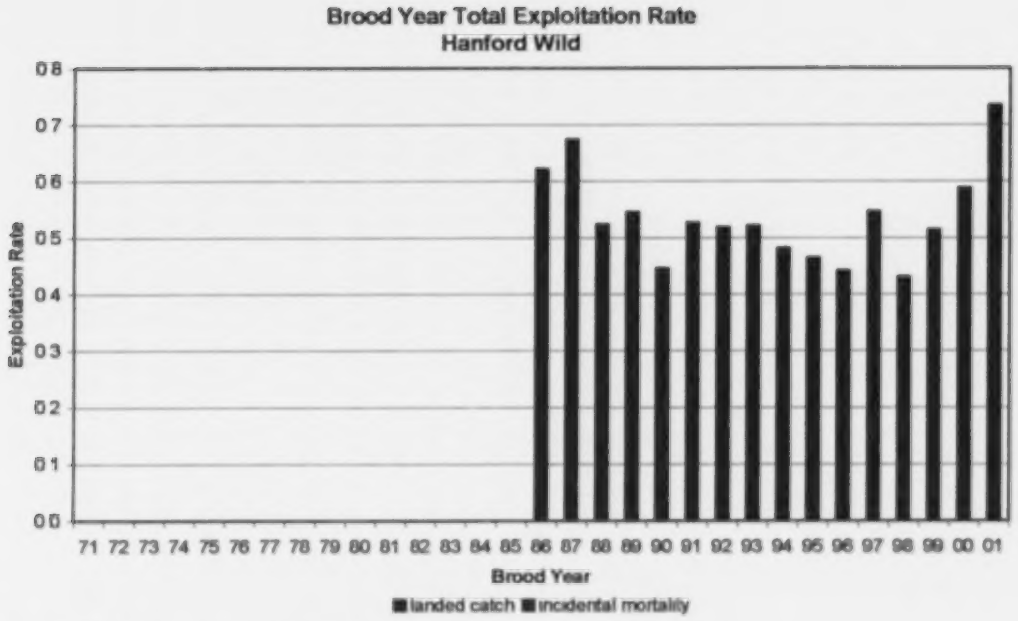

Figure F.27. Hanford Wild total exploitation rates by brood year.

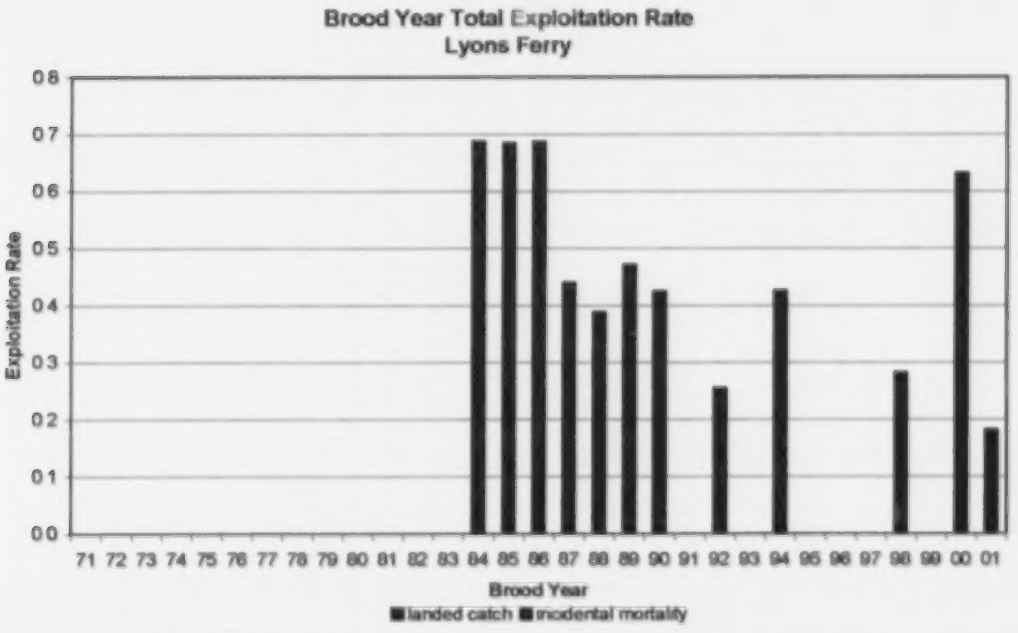

Figure F.28. Lyons Ferry (Lyons Ferry Hatchery) total exploitation rates by brood year.

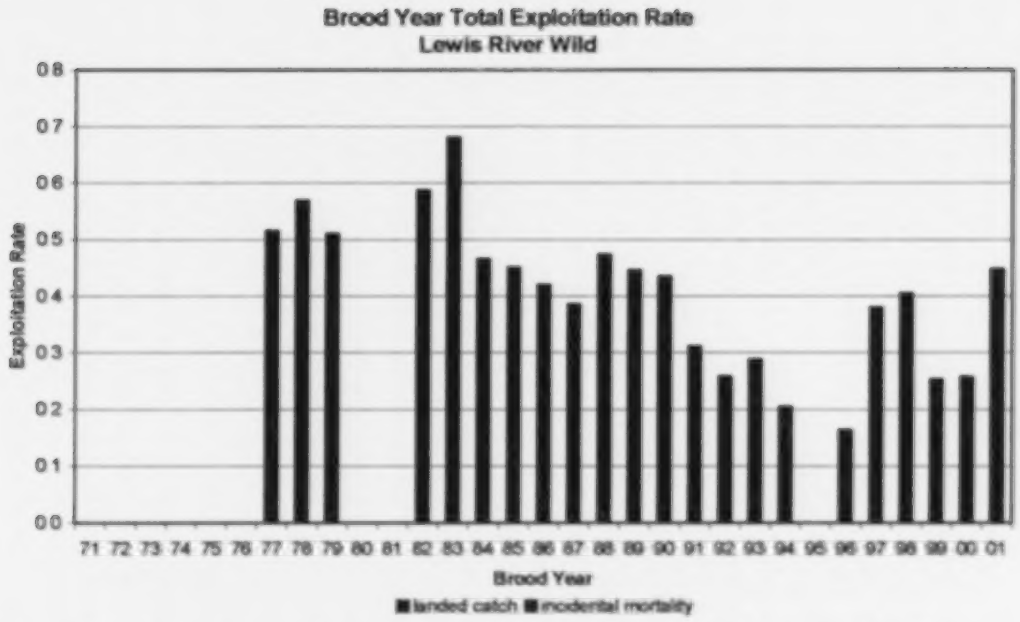

Figure F.29. Lewis River Wild (Lewis River Wild) total exploitation rates by brood year.

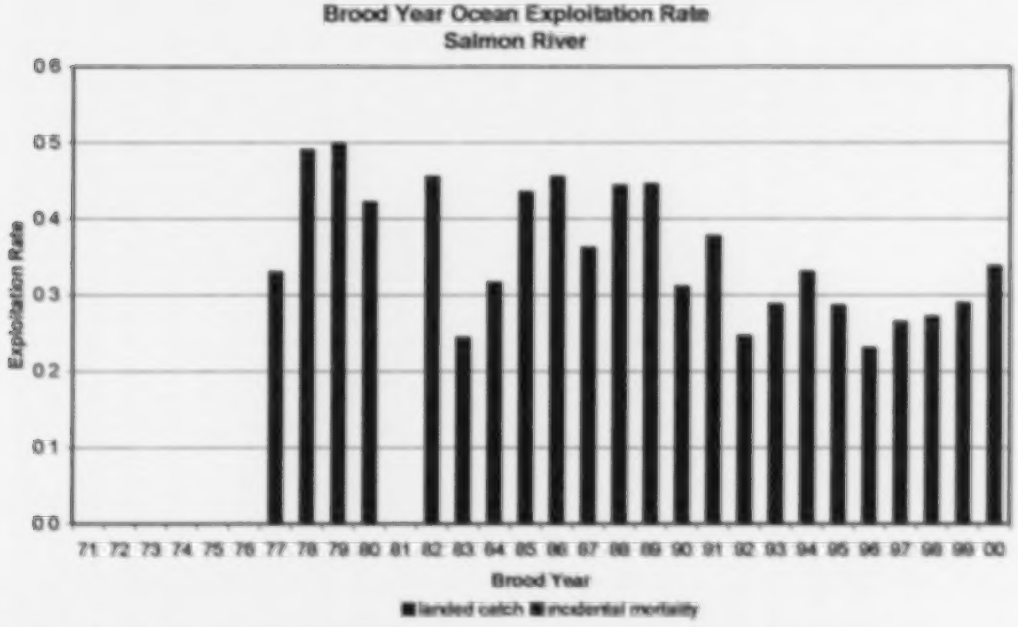

Figure F.30. Salmon River (Oregon Coast) ocean exploitation rates by brood year

Appendix G. Model estimates of the stock composition of the AABM, and other troll and sport fisheries for 2006 and the average from 1985 to 2005.

"Catch as Percent of Fishery" represents the stock composition of a specific fishery; "Catch as Percent of All Fisheries" represents the proportion of the total catch of a stock that is caught in a specific fishery; "Percent of Total Return" represents the proportion of total return (catch + escapement) caught in a specific fishery.

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Appendix G.1. Southeast Alaska All Gear.

Model Stock	2006 Catch as Percent of Fishery	Average (1985 - 2005)		
		Catch as Percent of Fishery	Catch as Percent of All Fisheries	Catch as Percent of Total Return
WCVI Hatchery	16.47%	16.56%	48.13%	16.20%
Oregon Coastal North Migrating	15.73%	15.85%	35.38%	15.19%
Columbia Upriver Bright	16.48%	16.07%	28.10%	13.35%
North/Central BC	11.64%	14.89%	26.94%	10.29%
Fraser Early	6.87%	5.66%	27.80%	6.91%
Mid-Columbia Brights	6.29%	5.09%	33.16%	12.61%
Upper Georgia Strait	6.53%	4.22%	36.31%	20.07%
Alaska South SE	4.59%	3.98%	96.62%	35.25%
WCVI Wild	1.85%	3.64%	48.19%	16.32%
Washington Coastal Wild	2.33%	3.41%	19.69%	10.12%
WA Coastal Hatchery	2.08%	2.56%	16.22%	9.46%
Columbia Upriver Summer	4.53%	2.36%	35.68%	14.15%
Willamette River Hatchery	1.67%	2.05%	13.24%	4.62%
Fall Cowlitz Hatchery	0.79%	1.23%	6.51%	2.42%
Lewis River Wild	0.83%	0.88%	17.63%	7.34%
Lower GS Hatchery	0.40%	0.43%	3.81%	1.88%
Lower Georgia Strait	0.11%	0.26%	4.35%	2.13%
Fraser Late	0.11%	0.22%	0.47%	0.16%
PS Hatchery Fingerling	0.16%	0.15%	0.48%	0.26%
Skagit Summer/Fall	0.11%	0.10%	4.45%	1.14%
Spring Cowlitz Hatchery	0.08%	0.08%	1.66%	0.82%
Snake River Fall	0.17%	0.08%	8.62%	5.13%
Puget Sound Natural	0.03%	0.07%	0.50%	0.26%
Stillaguamish Summer/Fall	0.05%	0.06%	16.76%	5.83%
Nooksack Fall	0.02%	0.04%	0.15%	0.11%
Snohomish Summer/Fall	0.05%	0.04%	3.71%	0.95%
PS Yearling	0.02%	0.02%	0.49%	0.33%
Lower Bonneville Hatchery	0.00%	0.00%	0.00%	0.00%
Spring Creek Hatchery	0.00%	0.00%	0.00%	0.00%
Nooksack Spring	0.00%	0.00%	0.00%	0.00%

Appendix G.2. North B.C. Troll and Sport.

Model Stock	2006 Catch as Percent of Fishery	Average (1985 - 2005)		
		Catch as Percent of Fishery	Catch as Percent of All Fisheries	Catch as Percent of Total Return
North/Central BC	47.77%	44.22%	62.12%	25.97%
Oregon Coastal North Migrating	11.43%	14.33%	26.79%	12.68%
Columbia Upriver Bright	6.50%	7.42%	11.30%	5.67%
WCVI Hatchery	5.49%	6.55%	14.70%	5.57%
Upper Georgia Strait	8.45%	4.35%	32.11%	18.18%
Fraser Early	3.70%	3.39%	14.67%	4.28%
Washington Coastal Wild	1.71%	3.15%	14.58%	8.30%
Willamette River Hatchery	1.64%	3.01%	14.85%	6.03%
WA Coastal Hatchery	1.59%	2.37%	12.77%	7.78%
Mid-Columbia Brights	2.52%	2.14%	12.95%	5.31%
Columbia Upriver Summer	3.58%	1.82%	22.98%	9.71%
WCVI Wild	0.62%	1.49%	14.60%	5.57%
Lower GS Hatchery	1.24%	1.11%	8.82%	4.42%
Fall Cowlitz Hatchery	0.67%	1.02%	4.39%	1.76%
Fraser Late	0.53%	0.82%	1.37%	0.50%
Lower Georgia Strait	0.37%	0.57%	8.68%	4.45%
Skagit Summer/Fall	0.46%	0.37%	15.15%	3.95%
Nooksack Fall	0.19%	0.37%	1.28%	0.91%
Lewis River Wild	0.20%	0.36%	5.55%	2.67%
PS Hatchery Fingerling	0.36%	0.28%	0.83%	0.44%
Spring Cowlitz Hatchery	0.21%	0.25%	4.06%	2.20%
Snohomish Summer/Fall	0.28%	0.19%	14.67%	3.96%
Puget Sound Natural	0.06%	0.11%	0.77%	0.40%
Alaska South SE	0.11%	0.10%	2.32%	0.84%
PS Yearling	0.13%	0.09%	1.86%	1.20%
Snake River Fall	0.13%	0.05%	5.98%	3.83%
Stillaguamish Summer/Fall	0.04%	0.04%	9.12%	3.27%
Spring Creek Hatchery	0.02%	0.02%	0.06%	0.05%
Nooksack Spring	0.00%	0.00%	1.58%	0.49%
Lower Bonneville Hatchery	0.00%	0.00%	0.00%	0.00%

Appendix G.3. Central B.C. Troll.

Model Stock	2006 Catch as Percent of Fishery	Average (1985 – 2005)		
		Catch as Percent of Fishery	Catch as Percent of All Fisheries	Catch as Percent of Total Return
Fraser Late	25.00%	20.69%	2.10%	1.13%
WCVI Hatchery	25.00%	17.84%	3.42%	1.35%
Columbia Upriver Bright	12.50%	8.62%	0.92%	0.51%
North/Central BC	12.50%	6.45%	1.11%	0.40%
Upper Georgia Strait	12.50%	6.19%	3.50%	2.17%
WCVI Wild	0.00%	3.67%	3.37%	1.34%
Columbia Upriver Summer	12.50%	3.92%	3.57%	1.67%
Fraser Early	0.00%	3.60%	1.02%	0.34%
Washington Coastal Wild	0.00%	3.48%	1.19%	0.76%
Lower GS Hatchery	0.00%	3.08%	1.49%	0.98%
WA Coastal Hatchery	0.00%	2.47%	1.11%	0.70%
Mid-Columbia Brights	0.00%	2.66%	1.08%	0.52%
Oregon Coastal North Migrating	0.00%	2.33%	0.34%	0.17%
Lower Bonneville Hatchery	0.00%	1.94%	0.82%	0.42%
Nooksack Fall	0.00%	1.56%	0.37%	0.31%
Lower Georgia Strait	0.00%	1.48%	1.42%	0.97%
PS Hatchery Fingerling	0.00%	1.27%	0.26%	0.17%
Skagit Summer/Fall	0.00%	0.90%	2.14%	0.83%
Lewis River Wild	0.00%	0.62%	0.67%	0.35%
Puget Sound Natural	0.00%	0.59%	0.26%	0.18%
Snohomish Summer/Fall	0.00%	0.47%	1.68%	0.85%
Spring Creek Hatchery	0.00%	0.41%	0.10%	0.08%
PS Yearling	0.00%	0.28%	0.38%	0.30%
Willamette River Hatchery	0.00%	0.26%	0.09%	0.05%
Spring Cowlitz Hatchery	0.00%	0.15%	0.19%	0.13%
Fall Cowlitz Hatchery	0.00%	0.12%	0.04%	0.02%
Stillaguamish Summer/Fall	0.00%	0.11%	1.77%	0.84%
Snake River Fall	0.00%	0.08%	0.64%	0.47%
Nooksack Spring	0.00%	0.01%	0.28%	0.15%
Alaska South SE	0.00%	0.00%	0.01%	0.00%

Appendix G.4. WCVI Troll and Outside Sport.

Model Stock	2006 Catch as Percent of Fishery	Average (1985–2005)		
		Catch as Percent of Fishery	Catch as Percent of All Fisheries	Catch as Percent of Total Return
Fraser Late	26.30%	22.97%	24.05%	10.94%
Columbia Upriver Bright	5.40%	8.47%	9.50%	5.03%
PS Hatchery Fingerling	13.25%	8.34%	15.71%	9.54%
Spring Creek Hatchery	7.70%	7.75%	15.70%	12.21%
Fall Cowlitz Hatchery	7.92%	7.74%	25.38%	11.69%
Lower Bonneville Hatchery	1.71%	6.35%	31.78%	14.77%
Oregon Coastal North Migrating	3.48%	5.14%	7.51%	3.58%
WCVI Hatchery	0.00%	5.07%	8.28%	3.59%
Nooksack Fall	2.59%	4.85%	11.03%	8.52%
Puget Sound Natural	2.35%	3.72%	15.86%	9.60%
Mid-Columbia Brights	5.58%	3.33%	13.23%	5.77%
Columbia Upriver Summer	6.64%	2.53%	23.72%	10.62%
Washington Coastal Wild	2.38%	2.25%	8.20%	4.52%
Willamette River Hatchery	1.87%	1.83%	6.26%	2.74%
WA Coastal Hatchery	2.48%	1.73%	7.29%	4.36%
Fraser Early	2.21%	1.41%	4.04%	1.15%
WCVI Wild	0.00%	1.28%	8.26%	3.60%
Skagit Summer/Fall	1.18%	0.85%	21.10%	6.72%
Lewis River Wild	0.59%	0.83%	10.61%	5.08%
PS Yearling	1.23%	0.75%	10.00%	7.26%
Spring Cowlitz Hatchery	1.01%	0.64%	7.14%	4.63%
Lower GS Hatchery	0.90%	0.49%	2.51%	1.36%
Snohomish Summer/Fall	0.88%	0.43%	18.35%	6.71%
North/Central BC	0.52%	0.40%	0.47%	0.18%
Snake River Fall	1.10%	0.35%	23.64%	15.89%
Lower Georgia Strait	0.32%	0.25%	2.49%	1.38%
Upper Georgia Strait	0.22%	0.11%	0.61%	0.36%
Stillaguamish Summer/Fall	0.15%	0.10%	15.43%	6.42%
Nooksack Spring	0.04%	0.02%	10.69%	3.62%
Alaska South SE	0.00%	0.00%	0.00%	0.00%

Appendix G.5. Strait of Georgia Sport and Troll.

Model Stock	2006 Catch as Percent of Fishery	Average (1985–2005)		
		Catch as Percent of Fishery	Catch as Percent of All Fisheries	Catch as Percent of Total Return
Fraser Late	40.62%	49.23%	42.23%	20.42%
Lower GS Hatchery	14.64%	10.77%	45.49%	26.47%
Nooksack Fall	5.76%	9.83%	18.99%	14.36%
Lower Georgia Strait	4.61%	6.04%	46.34%	28.04%
PS Hatchery Fingerling	7.65%	4.69%	7.56%	4.56%
Fraser Early	6.40%	4.02%	9.35%	2.60%
Upper Georgia Strait	6.57%	2.86%	12.11%	6.98%
Puget Sound Natural	1.27%	2.00%	7.31%	4.38%
PS Yearling	3.14%	1.80%	19.27%	13.93%
Columbia Upriver Bright	1.04%	1.16%	1.01%	0.52%
Skagit Summer/Fall	1.39%	1.07%	22.80%	7.20%
Washington Coastal Wild	0.74%	0.92%	2.72%	1.54%
Spring Creek Hatchery	0.73%	0.90%	1.47%	1.13%
WCVI Hatchery	1.25%	0.85%	1.36%	0.45%
Lower Bonneville Hatchery	0.19%	0.79%	3.34%	1.38%
WA Coastal Hatchery	0.81%	0.72%	2.43%	1.49%
Snohomish Summer/Fall	1.10%	0.55%	20.45%	7.11%
North/Central BC	0.53%	0.42%	0.47%	0.17%
Mid-Columbia Brights	0.45%	0.37%	1.26%	0.54%
Columbia Upriver Summer	0.44%	0.29%	2.64%	1.10%
Stillaguamish Summer/Fall	0.23%	0.18%	22.73%	9.35%
WCVI Wild	0.12%	0.18%	1.35%	0.44%
Nooksack Spring	0.20%	0.17%	65.77%	24.45%
Willamette River Hatchery	0.06%	0.12%	0.36%	0.15%
Spring Cowlitz Hatchery	0.03%	0.04%	0.39%	0.23%
Lewis River Wild	0.00%	0.02%	0.19%	0.10%
Fall Cowlitz Hatchery	0.00%	0.02%	0.04%	0.02%
Snake River Fall	0.00%	0.00%	0.08%	0.05%
Oregon Coastal North Migrating	0.00%	0.00%	0.00%	0.00%
Alaska South SE	0.00%	0.00%	0.00%	0.00%

Appendix G.6. Washington/Oregon Troll and Sport.

Model Stock	2006 Catch as Percent of Fishery	Average (1985–2005)		
		Catch as Percent of Fishery	Catch as Percent of All Fisheries	Catch as Percent of Total Return
Spring Creek Hatchery	21.89%	23.64%	31.03%	24.29%
Fraser Late	22.56%	19.63%	12.46%	5.47%
Fall Cowlitz Hatchery	20.34%	19.38%	40.09%	17.19%
Lower Bonneville Hatchery	3.03%	11.91%	38.75%	16.19%
Spring Cowlitz Hatchery	6.23%	4.01%	31.23%	17.60%
Columbia Upriver Bright	4.70%	3.96%	2.72%	1.37%
PS Hatchery Fingerling	5.34%	3.40%	3.79%	2.19%
Oregon Coastal North Migrating	3.27%	2.57%	2.23%	0.98%
Nooksack Fall	1.04%	1.99%	2.54%	1.91%
Willamette River Hatchery	1.61%	1.82%	4.09%	1.61%
Puget Sound Natural	0.95%	1.55%	3.83%	2.16%
Lewis River Wild	1.05%	1.38%	11.87%	4.96%
Mid-Columbia Brights	1.97%	1.24%	3.12%	1.29%
Washington Coastal Wild	1.07%	1.12%	2.17%	1.17%
WA Coastal Hatchery	1.16%	0.89%	1.96%	1.15%
Columbia Upriver Summer	1.40%	0.56%	3.29%	1.42%
Snake River Fall	1.62%	0.49%	20.78%	13.40%
Fraser Early	0.29%	0.17%	0.38%	0.10%
PS Yearling	0.22%	0.12%	0.98%	0.67%
Alaska South SE	0.16%	0.07%	0.71%	0.25%
Lower GS Hatchery	0.04%	0.03%	0.13%	0.06%
WCVI Hatchery	0.05%	0.02%	0.03%	0.01%
Lower Georgia Strait	0.01%	0.02%	0.14%	0.07%
WCVI Wild	0.01%	0.01%	0.03%	0.01%
Skagit Summer/Fall	0.00%	0.00%	0.04%	0.01%
Snohomish Summer/Fall	0.00%	0.00%	0.04%	0.01%
Stillaguamish Summer/Fall	0.00%	0.00%	0.00%	0.00%
North/Central BC	0.00%	0.00%	0.00%	0.00%
Upper Georgia Strait	0.00%	0.00%	0.00%	0.00%
Nooksack Spring	0.00%	0.00%	0.00%	0.00%

Appendix H. Incidental mortality rates applied in the CTC model. Rates in original model were applied to all years. In the current model, rates in some fisheries vary in accordance to changes in management regulations.

		Rates in original Model			Rates applied in Model CLB0705			
Fishery Number	Fishery	Sublegal Rate	Legal Rate	Dropoff	Sublegal Rate	Legal Rate	Dropoff	Applicable Years
1	Alaska T	0.3	0.3	0	0.255	0.211	0.008	All
2	North T	0.3	0.3	0	0.255	0.211	0.017	1979-1995
2	North T				0.220	0.185	0.017	1996-2006
3	Centr T	0.3	0.3	0	0.255	0.211	0.017	1979-1995
3	Centr T				0.220	0.185	0.017	1996-2006
4	WCVI T	0.3	0.3	0	0.255	0.211	0.017	1979-1997
4	WCVI T				0.220	0.185	0.017	1998-2006
5	WA/OR T	0.3	0.3	0	0.255	0.211	0.017	1979-1983
5	WA/OR T				0.220	0.185	0.017	1984-2006
6	Geo St T	0.3	0.3	0	0.255	0.211	0.017	1979-1985,1987
6	Geo St T				0.220	0.185	0.017	1986,1988-2006
7	Alaska N	0.9	0.9	0	0.9	0.9	0	All
8	North N	0.9	0.9	0	0.9	0.9	0	All
9	Centr N	0.9	0.9	0	0.9	0.9	0	All
10	WCVI N	0.9	0.9	0	0.9	0.9	0	All
11	J De F N	0.9	0.9	0	0.9	0.9	0	All
12	PgtNth N	0.9	0.9	0	0.9	0.9	0	All
13	PgtSth N	0.9	0.9	0	0.9	0.9	0	All
14	WashCst N	0.9	0.9	0	0.9	0.9	0	All
15	Col R N	0.9	0.9	0	0.9	0.9	0	All
16	JohnSt N	0.9	0.9	0	0.9	0.9	0	All
17	Fraser N	0.9	0.9	0	0.9	0.9	0	All
18	Alaska S	0.3	0.3	0	0.123	0.123	0.036	All
19	Nor/Cen S	0.3	0.3	0	0.123	0.123	0.036	All
20	WCVI S	0.3	0.3	0	0.123	0.123	0.069	All
21	WashOcn S	0.3	0.3	0	0.123	0.123	0.069	All
22	PgtNth S	0.3	0.3	0	0.123	0.123	0.145	All
23	PgtSth S	0.3	0.3	0	0.123	0.123	0.145	All
24	Geo St S	0.3	0.3	0	0.322	0.322	0.069	1979-1981
24	Geo St S				0.123	0.123	0.069	1982-2006
25	Col R S	0.3	0.3	0	0.123	0.123	0.069	All

Appendix I. Time series of abundance indices from 1979 to 2007 for SEAK, NBC, and WCVI AABM fisheries as estimated by CTC Chinook Model calibration CLB0705.

This time series is NOT the first postseason AI and is for trend analysis only (Figures 3.4 to 3.6). For evaluation of overage and underage (Tables 3.4 and 3.5), use the first postseason AI in Table 3.3 instead.

Year	SEAK	NBC	WCVI
1979	0.97	1.04	1.10
1980	1.03	0.98	0.96
1981	0.92	0.94	0.93
1982	1.09	1.05	1.01
1983	1.29	1.24	0.95
1984	1.48	1.41	1.05
1985	1.35	1.32	0.99
1986	1.51	1.48	1.03
1987	1.76	1.76	1.19
1988	2.17	1.88	1.13
1989	1.88	1.70	0.99
1990	1.90	1.66	0.89
1991	1.81	1.53	0.75
1992	1.67	1.41	0.78
1993	1.68	1.43	0.69
1994	1.58	1.26	0.52
1995	1.07	0.98	0.41
1996	0.94	0.93	0.49
1997	1.24	1.12	0.58
1998	1.20	1.01	0.56
1999	1.09	0.95	0.49
2000	0.97	0.93	0.49
2001	1.16	1.20	0.77
2002	1.75	1.67	1.12
2003	2.17	1.85	1.18
2004	2.06	1.78	0.98
2005	1.89	1.62	0.80
2006	1.73	1.50	0.68
2007	1.60	1.35	0.67

Appendix J. Abundance indices in total and by model stock for AABM fisheries, from Calibration #0705.

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Table J.1. Abundance indices (AIs) for the Southeast Alaska troll fishery by model stock and year (stock groups 1-15), from CLB 0705. Numbers represent the model stock contribution to the total AI: the summation across all 30 stocks and stock groups equals the AI total for each calendar year.

Year	Alaska South SE	North Central	Fraser Early	Fraser Late	WCVI Hatchery	WCVI Natural	Georg. St. Upper	Georg St Lwr. Nat	Georg. St. Lwr. Hat	Nooksack Fall	Pug. Snd Fingerling	Pug Snd. Nat. F	Pug Snd Yearling	Nooksack Spring	Skagit Wild	AI Total
1979	0.03	0.12	0.06	0.00	0.05	0.07	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97
1980	0.03	0.13	0.05	0.00	0.10	0.15	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03
1981	0.04	0.14	0.04	0.00	0.08	0.12	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.92
1982	0.05	0.14	0.04	0.00	0.19	0.21	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.09
1983	0.06	0.16	0.04	0.00	0.30	0.14	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.29
1984	0.06	0.19	0.05	0.00	0.28	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.48
1985	0.06	0.21	0.07	0.00	0.15	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35
1986	0.07	0.22	0.07	0.00	0.12	0.04	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.51
1987	0.07	0.24	0.07	0.00	0.09	0.03	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76
1988	0.06	0.25	0.07	0.00	0.22	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.17
1989	0.04	0.26	0.07	0.00	0.32	0.07	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.88
1990	0.03	0.26	0.07	0.00	0.47	0.10	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.90
1991	0.03	0.27	0.06	0.00	0.59	0.13	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.81
1992	0.03	0.27	0.06	0.00	0.55	0.13	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.67
1993	0.04	0.24	0.06	0.00	0.52	0.14	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68
1994	0.03	0.22	0.07	0.00	0.42	0.11	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.58
1995	0.03	0.23	0.07	0.00	0.15	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07
1996	0.03	0.23	0.08	0.00	0.05	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94
1997	0.03	0.24	0.10	0.00	0.18	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24
1998	0.04	0.23	0.08	0.00	0.28	0.07	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20
1999	0.04	0.24	0.07	0.00	0.14	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.09
2000	0.05	0.26	0.07	0.00	0.05	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97
2001	0.05	0.25	0.08	0.00	0.07	0.01	0.05	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.16
2002	0.05	0.25	0.10	0.00	0.24	0.03	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.75
2003	0.04	0.24	0.10	0.00	0.37	0.04	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.17
2004	0.05	0.24	0.09	0.00	0.39	0.03	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.06
2005	0.06	0.23	0.09	0.00	0.33	0.03	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89
2006	0.07	0.23	0.10	0.00	0.29	0.03	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.73
2007	0.08	0.23	0.12	0.00	0.29	0.03	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.60
Average	0.05	0.22	0.07	0.00	0.25	0.07	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.48

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Table J.1. Page 2 of 2 (stock groups 16-30).

Year	Stillaguamish Wild	Snohomish Wild	WA Co. Hat	Upriver Brights	Spring Ck Hat.	L. Bonn. Hatchery	Fall Cow. Hatchery	Lewis R. Wild	Willamette R Hat	Spr. Cow. Hatchery	Col. R. Summer	Oregon Coast	WA Co. Wild	Lyons Ferry	Mid. Col. R Brights	AI Total
1979	0.00	0.00	0.03	0.18	0.00	0.00	0.03	0.02	0.02	0.00	0.04	0.23	0.03	0.00	0.00	0.97
1980	0.00	0.00	0.03	0.14	0.00	0.00	0.03	0.02	0.03	0.00	0.04	0.17	0.04	0.00	0.00	1.03
1981	0.00	0.00	0.02	0.10	0.00	0.00	0.03	0.02	0.03	0.01	0.03	0.16	0.04	0.00	0.01	0.92
1982	0.00	0.00	0.02	0.06	0.00	0.00	0.03	0.01	0.03	0.00	0.02	0.17	0.04	0.00	0.01	1.09
1983	0.00	0.00	0.02	0.09	0.00	0.00	0.03	0.01	0.04	0.00	0.03	0.25	0.03	0.00	0.02	1.29
1984	0.00	0.00	0.02	0.21	0.00	0.00	0.03	0.01	0.04	0.00	0.03	0.36	0.04	0.00	0.02	1.48
1985	0.00	0.00	0.02	0.24	0.00	0.00	0.03	0.01	0.03	0.00	0.03	0.34	0.04	0.00	0.01	1.35
1986	0.00	0.00	0.03	0.35	0.00	0.00	0.03	0.01	0.04	0.00	0.03	0.35	0.05	0.00	0.02	1.51
1987	0.00	0.00	0.04	0.49	0.00	0.00	0.03	0.02	0.05	0.01	0.03	0.40	0.06	0.00	0.07	1.76
1988	0.00	0.00	0.05	0.53	0.00	0.00	0.14	0.04	0.06	0.00	0.03	0.38	0.07	0.00	0.14	2.17
1989	0.00	0.00	0.06	0.33	0.00	0.00	0.05	0.04	0.05	0.00	0.03	0.30	0.08	0.00	0.12	1.88
1990	0.00	0.00	0.06	0.25	0.00	0.00	0.02	0.02	0.07	0.00	0.03	0.32	0.08	0.00	0.08	1.90
1991	0.00	0.00	0.05	0.13	0.00	0.00	0.01	0.01	0.05	0.00	0.02	0.29	0.06	0.00	0.05	1.81
1992	0.00	0.00	0.05	0.10	0.00	0.00	0.02	0.01	0.03	0.00	0.02	0.26	0.05	0.00	0.04	1.67
1993	0.00	0.00	0.05	0.18	0.00	0.00	0.01	0.01	0.03	0.00	0.02	0.24	0.05	0.00	0.05	1.68
1994	0.00	0.00	0.05	0.21	0.00	0.00	0.01	0.01	0.02	0.00	0.02	0.29	0.05	0.00	0.05	1.58
1995	0.00	0.00	0.04	0.12	0.00	0.00	0.01	0.01	0.02	0.00	0.02	0.21	0.05	0.00	0.04	1.07
1996	0.00	0.00	0.04	0.13	0.00	0.00	0.02	0.01	0.01	0.00	0.02	0.17	0.05	0.00	0.05	0.94
1997	0.00	0.00	0.03	0.18	0.00	0.00	0.01	0.01	0.02	0.00	0.02	0.20	0.05	0.00	0.09	1.24
1998	0.00	0.00	0.02	0.12	0.00	0.00	0.00	0.01	0.02	0.00	0.02	0.16	0.04	0.00	0.06	1.20
1999	0.00	0.00	0.02	0.21	0.00	0.00	0.01	0.00	0.02	0.00	0.02	0.16	0.03	0.00	0.06	1.09
2000	0.00	0.00	0.02	0.17	0.00	0.00	0.01	0.01	0.03	0.00	0.04	0.13	0.03	0.00	0.05	0.97
2001	0.00	0.00	0.02	0.20	0.00	0.00	0.01	0.01	0.03	0.00	0.07	0.19	0.03	0.00	0.07	1.16
2002	0.00	0.00	0.02	0.31	0.00	0.00	0.02	0.02	0.07	0.00	0.10	0.27	0.03	0.00	0.16	1.75
2003	0.00	0.00	0.03	0.46	0.00	0.00	0.05	0.02	0.04	0.00	0.10	0.34	0.04	0.00	0.23	2.17
2004	0.00	0.00	0.03	0.40	0.00	0.00	0.03	0.02	0.05	0.00	0.09	0.35	0.04	0.00	0.16	2.06
2005	0.00	0.00	0.03	0.39	0.00	0.00	0.03	0.01	0.02	0.00	0.09	0.32	0.04	0.00	0.13	1.89
2006	0.00	0.00	0.03	0.29	0.00	0.00	0.02	0.01	0.03	0.00	0.08	0.29	0.04	0.00	0.11	1.73
2007	0.00	0.00	0.03	0.21	0.00	0.00	0.02	0.01	0.01	0.00	0.07	0.25	0.03	0.00	0.10	1.60
Average	0.00	0.00	0.03	0.23	0.00	0.00	0.03	0.01	0.04	0.00	0.04	0.26	0.04	0.00	0.07	1.48

Table J.2. Abundance indices (AIs) for the Northern BC troll fishery by stock and year (stock groups 1-15), from CLB 0705. Numbers represent the model stock contribution to the total AI: the summation across all 30 stocks and stock groups equals the AI total for each calendar year.

Year	Alaska South SE	North Central	Fraser Early	Fraser Late	WCVI Hatchery	WCVI Natural	Georg. St. Upper	Georg St Lwr. Nat	Georg. St. Lwr. Hat	Nooksack Fall	Pug. Snd Fingerling	Pug Snd. Nat. F	Pug Snd Yearling	Nooksack Spring	Skagit Wild	AI Total
1979	0.00	0.08	0.07	0.02	0.04	0.05	0.06	0.02	0.02	0.01	0.00	0.00	0.00	0.02	0.01	1.04
1980	0.00	0.09	0.06	0.01	0.05	0.08	0.05	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.98
1981	0.00	0.09	0.05	0.02	0.06	0.08	0.06	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.94
1982	0.00	0.10	0.05	0.02	0.12	0.10	0.05	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.01	1.05
1983	0.00	0.11	0.05	0.02	0.16	0.08	0.04	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	1.24
1984	0.00	0.12	0.06	0.02	0.14	0.05	0.05	0.01	0.03	0.01	0.00	0.00	0.00	0.00	0.01	1.41
1985	0.00	0.13	0.08	0.02	0.09	0.03	0.06	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.01	1.32
1986	0.00	0.15	0.09	0.01	0.06	0.02	0.06	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.01	1.48
1987	0.00	0.15	0.09	0.01	0.07	0.02	0.07	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.76
1988	0.00	0.16	0.08	0.01	0.13	0.03	0.06	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	1.88
1989	0.00	0.17	0.08	0.01	0.20	0.04	0.07	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.70
1990	0.00	0.18	0.08	0.01	0.27	0.06	0.05	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.66
1991	0.00	0.18	0.08	0.01	0.32	0.07	0.05	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.53
1992	0.00	0.17	0.07	0.01	0.31	0.08	0.03	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.41
1993	0.00	0.16	0.07	0.01	0.29	0.08	0.03	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.43
1994	0.00	0.16	0.08	0.00	0.20	0.05	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.26
1995	0.00	0.15	0.08	0.00	0.07	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.98
1996	0.00	0.15	0.09	0.01	0.05	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.93
1997	0.00	0.16	0.11	0.01	0.12	0.03	0.03	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.12
1998	0.00	0.16	0.10	0.01	0.13	0.03	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.01
1999	0.00	0.16	0.09	0.01	0.07	0.01	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.95
2000	0.00	0.16	0.08	0.01	0.03	0.00	0.05	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.93
2001	0.00	0.17	0.09	0.01	0.06	0.01	0.06	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	1.20
2002	0.00	0.17	0.11	0.01	0.15	0.02	0.07	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	1.67
2003	0.00	0.16	0.12	0.01	0.19	0.02	0.08	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	1.85
2004	0.00	0.17	0.12	0.01	0.22	0.02	0.09	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	1.78
2005	0.00	0.17	0.11	0.01	0.17	0.01	0.09	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	1.62
2006	0.00	0.16	0.12	0.01	0.17	0.02	0.11	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	1.50
2007	0.00	0.16	0.14	0.01	0.13	0.02	0.12	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.35
Average	0.00	0.15	0.09	0.01	0.14	0.04	0.06	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	1.34

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Table J.2. Page 2 of 2 (stock groups 16-30).

Year	Stillaguamish Wild	Snohomish Wild	WA Co. Hatchery	Upriver Brights	Spring Ck. Hat.	L. Bonn. Hatchery	Fall Cow. Hatchery	Lewis R. Wild	Willamette R. Hat.	Spr. Cow. Hatchery	Col. R. Summer	Oregon Coast	WA Co. Wild	Lyons Ferry	Mid. Col. R. Brights	AI Total
1979	0.00	0.01	0.04	0.12	0.00	0.00	0.02	0.01	0.05	0.01	0.02	0.30	0.05	0.00	0.00	1.04
1980	0.00	0.01	0.04	0.09	0.00	0.00	0.02	0.01	0.06	0.01	0.02	0.24	0.06	0.00	0.00	0.98
1981	0.00	0.00	0.04	0.07	0.00	0.00	0.02	0.01	0.07	0.01	0.02	0.23	0.06	0.00	0.01	0.94
1982	0.00	0.00	0.03	0.04	0.00	0.00	0.02	0.01	0.09	0.01	0.02	0.28	0.06	0.00	0.01	1.05
1983	0.00	0.00	0.03	0.07	0.00	0.00	0.02	0.01	0.09	0.01	0.02	0.40	0.06	0.00	0.02	1.24
1984	0.00	0.00	0.03	0.14	0.00	0.00	0.02	0.01	0.09	0.01	0.02	0.51	0.06	0.00	0.01	1.41
1985	0.00	0.00	0.03	0.16	0.00	0.00	0.02	0.00	0.08	0.00	0.02	0.47	0.07	0.00	0.01	1.32
1986	0.00	0.00	0.05	0.25	0.00	0.00	0.02	0.01	0.10	0.01	0.02	0.49	0.08	0.00	0.02	1.48
1987	0.00	0.00	0.07	0.34	0.00	0.00	0.03	0.02	0.13	0.01	0.02	0.53	0.10	0.00	0.06	1.76
1988	0.00	0.00	0.09	0.33	0.00	0.00	0.08	0.02	0.14	0.01	0.02	0.48	0.12	0.00	0.09	1.88
1989	0.00	0.00	0.09	0.20	0.00	0.00	0.02	0.01	0.14	0.01	0.02	0.40	0.13	0.00	0.07	1.70
1990	0.00	0.00	0.09	0.15	0.00	0.00	0.01	0.01	0.14	0.00	0.01	0.40	0.12	0.00	0.05	1.66
1991	0.00	0.00	0.08	0.08	0.00	0.00	0.01	0.01	0.10	0.00	0.01	0.37	0.10	0.00	0.03	1.53
1992	0.00	0.00	0.09	0.07	0.00	0.00	0.01	0.01	0.07	0.01	0.01	0.33	0.09	0.00	0.03	1.41
1993	0.00	0.00	0.08	0.12	0.00	0.00	0.01	0.00	0.06	0.00	0.01	0.37	0.08	0.00	0.03	1.43
1994	0.00	0.00	0.07	0.13	0.00	0.00	0.00	0.01	0.05	0.00	0.01	0.34	0.08	0.00	0.03	1.26
1995	0.00	0.00	0.07	0.08	0.00	0.00	0.01	0.01	0.04	0.00	0.01	0.29	0.07	0.00	0.03	0.98
1996	0.00	0.00	0.06	0.09	0.00	0.00	0.01	0.01	0.04	0.00	0.01	0.24	0.07	0.00	0.04	0.93
1997	0.00	0.00	0.05	0.12	0.00	0.00	0.01	0.00	0.05	0.00	0.01	0.26	0.07	0.00	0.06	1.12
1998	0.00	0.00	0.03	0.08	0.00	0.00	0.00	0.00	0.05	0.00	0.02	0.22	0.06	0.00	0.04	1.01
1999	0.00	0.00	0.03	0.14	0.00	0.00	0.01	0.00	0.06	0.00	0.03	0.19	0.04	0.00	0.04	0.95
2000	0.00	0.00	0.03	0.11	0.00	0.00	0.00	0.00	0.07	0.00	0.04	0.23	0.04	0.00	0.03	0.93
2001	0.00	0.00	0.03	0.15	0.00	0.00	0.01	0.01	0.11	0.00	0.05	0.30	0.04	0.00	0.05	1.20
2002	0.00	0.00	0.04	0.22	0.00	0.00	0.02	0.01	0.14	0.00	0.06	0.43	0.05	0.00	0.11	1.67
2003	0.00	0.00	0.04	0.30	0.00	0.00	0.03	0.01	0.10	0.01	0.06	0.47	0.06	0.00	0.14	1.85
2004	0.00	0.00	0.05	0.25	0.00	0.00	0.01	0.01	0.09	0.01	0.06	0.47	0.07	0.00	0.10	1.78
2005	0.00	0.00	0.05	0.25	0.00	0.00	0.02	0.01	0.07	0.00	0.05	0.43	0.06	0.00	0.08	1.62
2006	0.00	0.00	0.05	0.18	0.00	0.00	0.01	0.00	0.06	0.00	0.05	0.38	0.06	0.00	0.07	1.50
2007	0.00	0.00	0.06	0.13	0.00	0.00	0.01	0.00	0.04	0.00	0.05	0.31	0.05	0.00	0.07	1.35
Average	0.00	0.00	0.05	0.15	0.00	0.00	0.02	0.01	0.08	0.00	0.03	0.36	0.07	0.00	0.05	1.34

Table J.3. Abundance indices (AIs) for the WCVI troll fishery by stock and year (stock groups 1-15), from CLB 0705. Numbers represent the portion of the AI total estimated for each model stock; the summation across all 30 stock groups equals the AI total for each.

Year	Alaska South SE	North Central	Fraser Early	Fraser Late	WCVI Hatchery	WCVI Natural	Georg St Upper	Georg. St. Lwr Nat.	Georg St Lwr. Hat	Nooksack Fall	Pug Snd. Fingerling	Pug. Snd Nat F.	Pug Snd. Year	Nooksack Spring	Skagit Wild	AI Total
1979	0.00	0.00	0.01	0.28	0.01	0.02	0.00	0.01	0.01	0.08	0.04	0.03	0.02	0.00	0.02	1.10
1980	0.00	0.00	0.01	0.21	0.02	0.02	0.00	0.01	0.01	0.09	0.05	0.02	0.03	0.00	0.02	0.96
1981	0.00	0.00	0.00	0.24	0.02	0.03	0.00	0.00	0.01	0.09	0.05	0.02	0.03	0.00	0.02	0.93
1982	0.00	0.00	0.00	0.26	0.04	0.03	0.00	0.00	0.01	0.09	0.05	0.02	0.02	0.00	0.01	1.01
1983	0.00	0.00	0.01	0.24	0.05	0.02	0.00	0.00	0.00	0.11	0.06	0.03	0.02	0.00	0.01	0.95
1984	0.00	0.00	0.01	0.28	0.04	0.01	0.00	0.00	0.01	0.13	0.06	0.03	0.02	0.00	0.02	1.05
1985	0.00	0.00	0.01	0.29	0.03	0.01	0.00	0.00	0.01	0.11	0.05	0.03	0.01	0.00	0.01	0.99
1986	0.00	0.00	0.01	0.24	0.02	0.01	0.00	0.00	0.00	0.09	0.06	0.03	0.01	0.00	0.01	1.03
1987	0.00	0.00	0.01	0.12	0.02	0.01	0.00	0.00	0.00	0.06	0.06	0.04	0.01	0.00	0.01	1.19
1988	0.00	0.00	0.01	0.08	0.04	0.01	0.00	0.00	0.00	0.06	0.07	0.05	0.01	0.00	0.01	1.13
1989	0.00	0.00	0.01	0.18	0.06	0.01	0.00	0.00	0.00	0.07	0.08	0.05	0.01	0.00	0.01	0.99
1990	0.00	0.00	0.01	0.21	0.08	0.02	0.00	0.00	0.00	0.07	0.07	0.05	0.01	0.00	0.01	0.89
1991	0.00	0.00	0.01	0.16	0.09	0.02	0.00	0.00	0.00	0.05	0.05	0.04	0.01	0.00	0.00	0.75
1992	0.00	0.00	0.01	0.21	0.09	0.02	0.00	0.00	0.00	0.03	0.04	0.03	0.00	0.00	0.00	0.78
1993	0.00	0.00	0.01	0.17	0.08	0.02	0.00	0.00	0.00	0.03	0.05	0.03	0.00	0.00	0.00	0.69
1994	0.00	0.00	0.01	0.10	0.05	0.01	0.00	0.00	0.00	0.02	0.06	0.03	0.00	0.00	0.00	0.52
1995	0.00	0.00	0.01	0.05	0.01	0.00	0.00	0.00	0.00	0.02	0.07	0.03	0.00	0.00	0.00	0.41
1996	0.00	0.00	0.01	0.07	0.02	0.00	0.00	0.00	0.00	0.02	0.06	0.03	0.00	0.00	0.00	0.49
1997	0.00	0.00	0.01	0.17	0.04	0.01	0.00	0.00	0.00	0.02	0.06	0.02	0.00	0.00	0.01	0.58
1998	0.00	0.00	0.01	0.18	0.04	0.01	0.00	0.00	0.00	0.02	0.06	0.02	0.00	0.00	0.00	0.56
1999	0.00	0.00	0.01	0.11	0.01	0.00	0.00	0.00	0.00	0.02	0.07	0.02	0.00	0.00	0.01	0.49
2000	0.00	0.00	0.01	0.11	0.01	0.00	0.00	0.00	0.00	0.03	0.06	0.02	0.00	0.00	0.01	0.49
2001	0.00	0.00	0.01	0.11	0.02	0.00	0.00	0.00	0.00	0.03	0.07	0.02	0.00	0.00	0.01	0.77
2002	0.00	0.00	0.01	0.20	0.05	0.01	0.00	0.00	0.00	0.03	0.07	0.02	0.01	0.00	0.01	1.12
2003	0.00	0.00	0.01	0.24	0.06	0.01	0.00	0.00	0.00	0.02	0.06	0.02	0.00	0.00	0.01	1.18
2004	0.00	0.00	0.01	0.15	0.06	0.00	0.00	0.00	0.00	0.01	0.06	0.02	0.01	0.00	0.01	0.98
2005	0.00	0.00	0.01	0.10	0.05	0.00	0.00	0.00	0.00	0.01	0.07	0.01	0.01	0.00	0.01	0.80
2006	0.00	0.00	0.01	0.11	0.05	0.01	0.00	0.00	0.00	0.02	0.09	0.02	0.01	0.00	0.01	0.68
2007	0.00	0.00	0.02	0.13	0.04	0.00	0.00	0.00	0.00	0.02	0.10	0.02	0.01	0.00	0.01	0.67
Average	0.00	0.00	0.01	0.17	0.04	0.01	0.00	0.00	0.00	0.05	0.06	0.03	0.01	0.00	0.01	0.83

-continued-

Table J.3. Page 2 of 2 (stock groups 16-30).

Year	Stillaguamish Wild	Snohomish Wild	WA Co. Hatchery	Upriver Brights	Spring Ck Hat.	L. Born. Hatchery	Fall Cow. Hatchery	Lewis R Wild	Willamette R Hat.	Spr Cow Hatchery	Col R. Summer	Oregon Coastal	WA Co Wild	Lyons Ferry	Mid Col. R Brights	AI Total
1979	0.00	0.01	0.01	0.05	0.16	0.13	0.08	0.01	0.01	0.01	0.02	0.04	0.01	0.00	0.00	1.10
1980	0.00	0.01	0.01	0.04	0.13	0.10	0.08	0.01	0.01	0.01	0.02	0.03	0.01	0.00	0.00	0.96
1981	0.00	0.01	0.01	0.03	0.12	0.09	0.07	0.01	0.01	0.01	0.02	0.03	0.01	0.00	0.00	0.93
1982	0.00	0.01	0.01	0.03	0.13	0.10	0.09	0.01	0.02	0.01	0.01	0.04	0.01	0.00	0.01	1.01
1983	0.00	0.01	0.01	0.05	0.04	0.08	0.08	0.01	0.02	0.01	0.02	0.06	0.01	0.00	0.01	0.95
1984	0.00	0.01	0.01	0.08	0.05	0.08	0.07	0.01	0.02	0.01	0.02	0.07	0.01	0.00	0.00	1.05
1985	0.00	0.01	0.01	0.10	0.03	0.07	0.08	0.01	0.02	0.01	0.01	0.07	0.01	0.00	0.00	0.99
1986	0.00	0.00	0.01	0.15	0.01	0.11	0.09	0.01	0.02	0.01	0.02	0.07	0.02	0.00	0.01	1.03
1987	0.00	0.00	0.02	0.18	0.01	0.24	0.18	0.02	0.03	0.01	0.02	0.07	0.02	0.00	0.04	1.19
1988	0.00	0.00	0.02	0.14	0.03	0.12	0.27	0.02	0.03	0.01	0.02	0.07	0.03	0.00	0.04	1.13
1989	0.00	0.00	0.02	0.09	0.04	0.05	0.13	0.01	0.03	0.01	0.01	0.06	0.03	0.00	0.03	0.99
1990	0.00	0.00	0.02	0.06	0.04	0.03	0.06	0.01	0.03	0.01	0.01	0.05	0.02	0.00	0.02	0.89
1991	0.00	0.00	0.02	0.04	0.05	0.04	0.04	0.01	0.02	0.01	0.01	0.05	0.02	0.00	0.01	0.75
1992	0.00	0.00	0.02	0.05	0.04	0.05	0.05	0.01	0.01	0.01	0.01	0.05	0.02	0.00	0.01	0.78
1993	0.00	0.00	0.02	0.06	0.02	0.03	0.04	0.00	0.01	0.00	0.01	0.05	0.02	0.00	0.02	0.69
1994	0.00	0.00	0.01	0.05	0.02	0.02	0.02	0.01	0.01	0.00	0.01	0.05	0.02	0.00	0.01	0.52
1995	0.00	0.00	0.01	0.04	0.02	0.02	0.03	0.00	0.01	0.00	0.01	0.04	0.01	0.00	0.01	0.41
1996	0.00	0.00	0.01	0.06	0.03	0.02	0.04	0.00	0.01	0.00	0.01	0.04	0.01	0.00	0.02	0.49
1997	0.00	0.00	0.01	0.05	0.02	0.02	0.03	0.00	0.01	0.00	0.01	0.03	0.01	0.00	0.02	0.58
1998	0.00	0.00	0.01	0.05	0.02	0.01	0.02	0.00	0.01	0.00	0.01	0.03	0.01	0.00	0.02	0.56
1999	0.00	0.00	0.01	0.07	0.03	0.01	0.02	0.00	0.01	0.00	0.02	0.03	0.01	0.00	0.02	0.49
2000	0.00	0.00	0.01	0.06	0.02	0.02	0.02	0.01	0.01	0.00	0.03	0.03	0.01	0.00	0.02	0.49
2001	0.00	0.00	0.01	0.09	0.10	0.06	0.04	0.01	0.03	0.00	0.04	0.05	0.01	0.01	0.04	0.77
2002	0.00	0.00	0.01	0.13	0.18	0.07	0.07	0.01	0.03	0.01	0.06	0.06	0.01	0.01	0.06	1.12
2003	0.00	0.00	0.01	0.14	0.18	0.06	0.10	0.01	0.02	0.01	0.05	0.07	0.01	0.01	0.06	1.18
2004	0.00	0.00	0.01	0.13	0.17	0.04	0.08	0.01	0.02	0.01	0.05	0.06	0.01	0.01	0.04	0.98
2005	0.00	0.00	0.01	0.12	0.10	0.01	0.07	0.01	0.01	0.01	0.05	0.06	0.01	0.01	0.04	0.80
2006	0.00	0.01	0.01	0.08	0.04	0.01	0.05	0.00	0.01	0.01	0.04	0.05	0.01	0.01	0.03	0.68
2007	0.00	0.01	0.01	0.06	0.02	0.01	0.05	0.00	0.01	0.01	0.04	0.04	0.01	0.01	0.03	0.67
Average	0.00	0.00	0.01	0.08	0.06	0.06	0.07	0.01	0.02	0.01	0.02	0.05	0.01	0.00	0.02	0.83

Appendix K. Fishery exploitation rate indices by stock, age and fishery, based on CWT data, 1975–2005.

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Table K.1. Alaska troll Stratified Proportion Fishery Index (SPFI) values as landed catch, based on CWT data.

YEAR	SPFI		WIN/SPR	JUNE IN	JUNE OUT	JULY IN	JULY OUT	FALL
1979	0.90		1.15	0.64	1.12	0.52	0.85	0.85
1980	1.13		0.64	1.18	0.87	0.99	1.33	1.33
1981	1.11		1.25	0.65	1.08	1.26	1.18	1.18
1982	0.86		0.95	1.53	0.92	1.23	0.64	0.64
1983	0.95		0.96	0.95	0.68	1.09	1.24	1.24
1984	0.68		0.36	1.74	1.03	0.40	0.50	0.50
1985	0.72		0.44	1.29	0.64	0.96	0.77	0.77
1986	0.50		0.41	0.62	0.18	0.73	1.21	1.21
1987	0.53		0.57	0.86	0.19	1.77	0.65	0.65
1988	0.45		1.35	0.21	0.00	1.58	0.66	0.66
1989	0.52		0.82	0.69	0.13	0.70	0.57	0.57
1990	0.78		0.64	1.35	0.12	1.54	1.15	1.15
1991	0.64		1.44	1.39	0.23	0.66	0.75	0.75
1992	0.44		1.01	0.83	0.08	0.31	0.39	0.39
1993	0.47		0.72	0.45	0.02	0.34	0.88	0.88
1994	0.45		0.66	0.18	0.04	0.22	0.67	0.67
1995	0.55		0.48	0.52	0.05	1.31	0.81	0.81
1996	0.48		0.56	1.06	0.10	0.68	0.56	0.56
1997	0.67		0.63	0.94	0.16	0.11	1.50	1.50
1998	0.44		0.80	0.24	0.06	0.52	0.96	0.96
1999	0.68		0.81	0.43	0.13	0.16	1.02	1.02
2000	0.46		0.91	0.14	0.08	0.08	1.42	1.42
2001	0.38		0.56	0.18	0.07	0.17	0.62	0.62
2002	0.53		0.40	0.16	0.06	0.20	1.14	1.14
2003	0.51		0.67	0.18	0.07	0.41	0.87	0.87
2004	0.43		0.78	0.26	0.07	0.35	0.88	0.88
2005	0.43		0.81	0.26	0.11	0.44	1.06	1.06

ER Stock Identifier:			
Alaska Southeast	Age 4	Age 5	Age 6
Quinsam	Age 4	Age 5	
Robertson Creek	Age 3	Age 4	Age 5
Salmon River Hatchery	Age 4	Age 5	
Columbia Upriver Brights	Age 4	Age 5	

Table K.2. Alaska troll Stratified Proportion Fishery Index (SPFI) values as total mortality, based on CWT data.

YEAR	SPFI		WIN/SPR	JUNE IN	JUNE OUT	JULY IN	JULY OUT	FALL
1979	0.88		1.12	0.63	1.12	0.50	0.83	0.83
1980	1.04		0.62	1.09	0.82	0.82	1.20	1.20
1981	1.12		1.26	0.69	1.12	1.12	1.20	1.20
1982	0.97		1.01	1.59	0.94	1.56	0.78	0.78
1983	1.08		0.93	1.04	0.69	0.96	1.66	1.66
1984	0.68		0.37	1.74	1.03	0.40	0.49	0.49
1985	0.85		0.46	1.25	0.62	0.90	1.06	1.06
1986	0.59		0.45	0.64	0.18	0.82	1.51	1.51
1987	0.62		0.59	0.80	0.18	2.68	0.78	0.78
1988	0.47		1.28	0.23	0.01	1.84	0.67	0.67
1989	0.58		0.79	0.67	0.12	1.02	0.62	0.62
1990	1.04		0.80	1.46	0.14	1.48	1.63	1.63
1991	0.69		1.36	1.30	0.22	0.97	0.81	0.81
1992	0.52		0.96	0.78	0.07	0.34	0.60	0.60
1993	0.55		0.70	0.41	0.02	0.37	1.11	1.11
1994	0.57		0.64	0.23	0.04	0.34	0.92	0.92
1995	0.68		0.49	0.55	0.06	1.40	1.03	1.03
1996	0.60		0.57	1.02	0.11	0.75	0.73	0.73
1997	0.67		0.62	0.87	0.16	0.14	1.49	1.49
1998	0.43		0.77	0.24	0.06	0.44	0.93	0.93
1999	0.71		0.80	0.41	0.13	0.20	1.09	1.09
2000	0.49		0.91	0.15	0.09	0.11	1.49	1.49
2001	0.40		0.55	0.17	0.07	0.23	0.68	0.68
2002	0.53		0.43	0.16	0.07	0.22	1.10	1.10
2003	0.49		0.69	0.18	0.07	0.35	0.83	0.83
2004	0.43		0.76	0.25	0.07	0.35	0.87	0.87
2005	0.42		0.74	0.25	0.11	0.40	1.05	1.05

ER Stock Identifiers:			
Alaska Southeast	Age 4	Age 5	Age 6
Quinsam	Age 4	Age 5	
Robertson Creek	Age 3	Age 4	Age 5
Salmon River Hatchery	Age 4	Age 5	
Columbia Upriver Brights	Age 4	Age 5	
Willamette Spring Hatchery	Age 4	Age 5	

Table K.3. Landed catch exploitation rate indices by stock and age in the NBC troll fishery, based on CWT data. Base period is 1979-1982.

LANDED CATCH EXPLOITATION RATE INDEX														
	AKS	QUI	QUI	RBT	RBT	RBT	SRH	SRH	SRH	URB	URB	URB	WSH	
Year	Age 4	Age 3	Age 4	Age 3	Age 4	Age 5	Age 3	Age 4	Age 5	Age 3	Age 4	Age 5	Age 4	Fishery
1979	NA	0.523	0.908	1.216	0.829	0.478	NA	NA	NA	0.463	1.182	NA	0.777	0.788
1980	NA	0.768	1.024	1.118	0.851	0.783	0.980	NA	NA	1.106	0.987	1.276	1.429	0.989
1981	NA	1.858	1.515	0.753	1.045	1.740	1.587	1.113	NA	NA	1.133	1.308	1.388	1.331
1982	1.000	0.852	0.554	0.913	1.275	NA	0.433	0.887	1.000	1.431	0.699	0.416	0.406	0.812
1983	1.791	1.221	1.721	1.048	0.710	0.595	0.424	0.620	1.232	1.969	1.320	NA	0.809	0.906
1984	1.226	0.244	0.535	0.406	1.364	2.028	NA	0.605	2.523	1.039	2.005	NA	0.303	1.237
1985	0.770	0.233	0.607	0.888	1.914	NA	0.433	NA	2.733	1.415	1.748	1.670	0.132	1.326
1986	0.758	0.897	0.883	NA	1.047	NA	0.091	0.439	NA	1.135	1.363	1.651	NA	0.811
1987	0.634	0.335	0.651	0.487	NA	NA	0.162	0.372	2.280	1.222	1.954	2.878	0.340	1.021
1988	2.051	0.181	0.726	0.331	0.620	NA	NA	0.298	0.748	0.375	1.060	1.941	0.475	0.665
1989	1.005	0.435	0.481	0.362	0.881	1.039	0.107	0.257	2.130	NA	1.017	4.196	0.223	0.967
1990	2.062	0.345	1.003	0.313	0.712	0.558	0.139	0.232	1.974	NA	1.221	2.374	0.184	0.790
1991	0.708	0.411	0.691	0.388	0.752	1.135	0.107	0.385	2.045	NA	NA	NA	0.167	0.748
1992	0.164	NA	1.948	0.304	0.587	0.689	0.105	0.241	0.960	NA	NA	NA	0.061	0.584
1993	0.299	NA	NA	0.177	0.616	0.831	0.105	0.567	2.353	0.000	1.127	NA	0.124	0.776
1994	0.062	NA	NA	0.329	0.741	0.893	0.171	0.506	2.142	NA	0.959	2.025	0.071	0.871
1995	0.000	NA	NA	NA	0.410	0.258	0.099	0.000	0.848	NA	NA	0.561	0.110	0.297
1996	0.000	NA	NA	0.000	NA	NA	0.000	0.000	0.000	0.000	0.000	NA	0.000	0.000
1997	0.000	0.375	0.410	0.218	0.411	NA	0.117	0.111	0.446	NA	0.653	NA	0.163	0.298
1998	0.000	0.000	0.000	0.000	0.571	NA	0.071	0.525	1.288	0.000	NA	1.587	0.000	0.509
1999	0.000	0.104	0.123	NA	0.207	0.325	0.054	0.110	0.242	NA	0.688	NA	0.000	0.203
2000	0.000	0.000	0.043	NA	NA	NA	0.031	0.201	0.279	NA	0.000	0.000	0.005	0.107
2001	0.000	0.000	0.015	0.000	NA	NA	0.032	0.133	0.718	0.000	0.000	NA	0.012	0.154
2002	0.066	0.000	0.110	0.000	0.349	NA	0.034	0.101	0.900	0.021	0.152	NA	0.078	0.225
2003	0.000	0.000	0.000	0.045	0.047	0.000	0.041	0.285	0.521	0.000	0.710	0.805	0.032	0.218
2004	0.743	0.000	0.059	0.065	0.184	0.364	0.060	0.244	0.938	0.000	0.612	1.246	0.108	0.357
2005	0.130	0.041	0.038	0.039	0.252	0.102	0.082	0.353	0.981	0.097	1.520	0.861	0.065	0.385

Stock Identifiers

AKS = ALASKA SPRING
QUI = QUINSAM
RBT = ROBERTSON CREEK
SRH = SALMON RIVER HATCHERY
URB = COLUMBIA UPRIVER BRIGHT
WSH = WILLAMETTE SPRING

Table K.4. Total mortality exploitation rate indices by stock and age in the NBC troll fishery, based on CWT data. Base period is 1979-1982.

TOTAL MORTALITY EXPLOITATION RATE INDEX														
	AKS	QUI	QUI	RBT	RBT	RBT	SRH	SRH	SRH	URB	URB	URB	WSH	
Year	Age 4	Age 3	Age 4	Age 3	Age 4	Age 5	Age 3	Age 4	Age 5	Age 3	Age 4	Age 5	Age 4	Fishery
1979	NA	0.562	0.877	1.244	0.837	0.474	NA	NA	NA	0.580	1.191	NA	0.752	0.799
1980	NA	0.779	1.025	1.034	0.848	0.777	0.967	NA	NA	1.078	0.991	1.272	1.369	0.983
1981	NA	1.835	1.526	0.756	1.041	1.749	1.513	1.110	NA	NA	1.138	1.320	1.399	1.325
1982	1.000	0.824	0.571	0.966	1.274	NA	0.521	0.890	1.000	1.342	0.680	0.408	0.480	0.819
1983	1.580	1.105	1.694	0.915	0.697	0.610	0.489	0.626	1.232	1.663	1.284	NA	0.706	0.879
1984	1.025	0.234	0.535	0.453	1.333	2.051	NA	0.610	2.567	0.930	1.986	NA	0.265	1.190
1985	0.675	0.233	0.595	0.935	1.875	NA	0.407	NA	2.802	1.205	1.730	1.637	0.112	1.242
1986	0.636	0.830	0.853	NA	1.033	NA	0.116	0.436	NA	0.996	1.356	1.619	NA	0.777
1987	0.591	0.419	0.684	0.477	NA	NA	0.180	0.371	2.364	1.643	2.002	2.904	0.386	1.008
1988	1.904	0.268	0.749	0.333	0.624	NA	NA	0.306	0.748	0.832	1.102	1.982	0.485	0.678
1989	0.881	0.461	0.498	0.391	0.873	1.049	0.208	0.272	2.186	NA	1.082	4.203	0.207	0.948
1990	2.090	0.472	1.031	0.387	0.727	0.572	0.235	0.246	2.045	NA	1.296	2.430	0.179	0.800
1991	0.703	0.519	0.698	0.471	0.758	1.154	0.229	0.394	2.105	NA	NA	NA	0.169	0.749
1992	0.221	NA	2.020	0.408	0.604	0.712	0.144	0.248	0.999	NA	NA	NA	0.066	0.589
1993	0.229	NA	NA	0.327	0.631	0.853	0.215	0.576	2.427	0.296	1.178	NA	0.124	0.781
1994	0.118	NA	NA	0.512	0.754	0.912	0.289	0.514	2.200	NA	0.988	2.085	0.074	0.874
1995	0.074	NA	NA	NA	0.419	0.281	0.166	0.015	0.919	NA	NA	0.600	0.136	0.319
1996	0.118	NA	NA	0.065	NA	NA	0.057	0.012	0.059	0.284	0.063	NA	0.006	0.049
1997	0.000	0.369	0.397	0.248	0.406	NA	0.124	0.113	0.446	NA	0.654	NA	0.136	0.289
1998	0.000	0.000	0.000	0.102	0.571	NA	0.153	0.523	1.314	0.065	NA	1.556	0.000	0.490
1999	0.000	0.103	0.119	NA	0.199	0.334	0.055	0.113	0.242	NA	0.694	NA	0.000	0.195
2000	0.000	0.000	0.042	NA	NA	NA	0.040	0.199	0.279	NA	0.000	0.000	0.005	0.102
2001	0.046	0.000	0.015	0.000	NA	NA	0.039	0.132	0.718	0.000	0.000	NA	0.010	0.141
2002	0.151	0.000	0.107	0.025	0.348	NA	0.046	0.103	0.928	0.045	0.157	NA	0.077	0.217
2003	0.069	0.000	0.000	0.041	0.048	0.000	0.075	0.285	0.534	0.113	0.717	0.820	0.032	0.215
2004	0.673	0.000	0.057	0.093	0.193	0.381	0.105	0.254	0.990	0.125	0.636	1.297	0.101	0.360
2005	0.159	0.034	0.037	0.070	0.255	0.101	0.154	0.364	1.025	0.466	1.567	0.904	0.059	0.393

Stock Identifiers

AKS = ALASKA SPRING
QUI = QUINSAM
RBT = ROBERTSON CREEK
SRH = SALMON RIVER HATCHERY
URB = COLUMBIA UPRIVER BRIGHT
WSH = WILLAMETTE SPRING

Table K.5. Landed catch exploitation rate indices by stock and age in the WCVI troll fishery, based on CWT data. Base period is 1979-1982.

LANDED CATCH EXPLOITATION RATE INDEX																										
	CWF	GAD	GAD	LRH	LRH	LRW	RBT	RBT	RBT	SAM	SAM	SPR	SPR	SPS	SPS	SRH	SRH	SRH	SUM	URB	URB	UWA	UWA	WSH	CHI	CHI	
Year	Age 4	Age 3	Age 4	Age 3	Age 4	Age 4	Age 3	Age 4	Age 5	Age 3	Age 4	Age 3	Age 4	Age 3	Age 4	Age 3	Age 4	Age 5	Age 4	Age 3	Age 4	Age 3	Age 4	Age 4	Age 3	Age 4	Fishery
1979	NA	NA	NA	1 176	NA	NA	1 154	1 270	NA	NA	1 000	0 979	0 818	NA	1 113	NA	NA	NA	NA	1 397	1 691	0 709	1 185	1 305	NA	NA	1 058
1980	NA	NA	NA	0 570	0 819	NA	1 379	1 419	NA	NA	NA	1 172	1 366	NA	NA	1 000	NA	NA	0 690	1 340	0 964	1 344	0 837	1 258	NA	NA	1 007
1981	0 782	0 714	NA	1 118	0 834	0 842	0 701	0 583	1 000	NA	NA	0 944	0 657	0 719	NA	NA	1 000	NA	1 310	0 200	0 906	0 834	0 917	0 605	NA	NA	0 868
1982	1 218	1 286	1 000	1 137	1 348	1 159	0 766	0 728	NA	1 000	NA	0 906	1 159	1 282	0 887	NA	NA	NA	NA	1 064	0 440	1 114	1 061	0 833	NA	NA	1 066
1983	1 410	NA	1 395	1 701	1 767	0 972	0 351	0 683	2 506	NA	0 950	1 491	0 972	NA	0 636	0 612	0 734	NA	NA	0 388	0 455	0 690	0 982	0 194	NA	NA	1 133
1984	1 353	2 079	NA	2 144	2 934	NA	1 300	1 014	1 713	NA	NA	1 366	1 455	1 114	NA	NA	0 817	NA	NA	0 862	1 365	1 704	0 756	0 435	NA	NA	1 566
1985	0 937	NA	0 837	1 236	1 184	NA	0 630	0 000	NA	NA	NA	0 563	1 096	0 728	0 559	NA	NA	NA	NA	0 760	1 078	0 886	1 087	0 311	NA	NA	0 886
1986	1 318	NA	NA	1 254	1 189	0 466	NA	0 567	NA	NA	NA	1 208	0 918	0 800	1 181	NA	0 423	NA	NA	1 524	0 753	0 839	1 159	NA	NA	NA	1 071
1987	0 878	NA	NA	0 931	NA	1 446	0 273	NA	NA	NA	NA	0 464	NA	0 671	0 562	0 118	0 490	NA	0 000	0 997	0 990	0 368	0 421	NA	NA	NA	0 595
1988	0 863	0 431	NA	1 111	1 426	1 048	0 451	0 571	NA	0 557	NA	1 001	NA	0 273	0 755	NA	1 414	NA	1 147	0 086	1 967	NA	0 801	0 554	NA	NA	0 931
1989	0 540	0 254	0 493	0 284	0 592	0 561	0 169	0 340	0 000	0 191	0 617	0 590	0 409	0 292	0 362	0 150	NA	NA	0 750	NA	0 930	NA	NA	0 350	NA	NA	0 471
1990	0 733	1 099	0 946	1 144	0 437	1 203	0 676	0 557	1 538	0 374	0 867	0 933	0 749	0 681	0 895	0 314	0 954	NA	1 338	NA	1 678	NA	NA	0 536	NA	NA	0 877
1991	NA	NA	0 946	0 797	NA	0 738	0 611	0 548	0 736	0 230	0 587	0 603	0 659	0 369	0 668	0 411	0 785	NA	0 448	NA	NA	NA	NA	0 050	NA	NA	0 641
1992	1 179	NA	0 457	0 651	NA	0 318	1 708	2 470	5 226	0 974	0 273	0 435	0 767	0 659	0 786	0 595	5 976	NA	0 747	NA	NA	NA	NA	0 123	NA	NA	0 832
1993	NA	NA	NA	1 082	0 709	NA	1 172	2 252	2 447	1 055	0 434	0 546	1 034	0 930	0 602	0 541	2 659	NA	NA	0 644	2 018	NA	NA	0 277	NA	NA	0 886
1994	0 120	NA	NA	NA	NA	0 222	0 614	0 732	1 395	0 079	0 710	0 844	0 664	0 196	0 507	NA	0 827	NA	NA	NA	1 023	NA	NA	0 163	NA	NA	0 559
1995	NA	0 222	NA	NA	NA	0 427	NA	0 436	0 363	0 146	0 398	0 361	0 361	0 248	0 282	0 016	NA	NA	NA	NA	NA	NA	NA	0 091	NA	NA	0 321
1996	0 000	0 000	0 000	0 000	NA	NA	0 000	NA	NA	0 000	0 000	0 000	NA	0 000	0 000	0 000	0 000	NA	0 000	0 000	0 000	NA	NA	0 000	NA	NA	0 000
1997	0 348	NA	0 200	0 713	NA	NA	0 000	0 064	NA	0 022	0 242	0 506	0 479	0 025	0 304	0 000	0 081	NA	0 072	NA	0 094	NA	NA	0 000	NA	NA	0 304
1998	NA	NA	NA	NA	NA	NA	NA	0 000	NA	NA	0 088	0 046	0 000	0 000	0 034	0 000	0 000	NA	0 000	0 016	NA	NA	NA	0 023	NA	NA	0 030
1999	NA	0 049	NA	0 096	NA	NA	NA	NA	0 000	NA	0 077	0 016	NA	0 018	0 061	0 000	0 000	NA	0 028	0 000	0 000	NA	NA	0 000	NA	NA	0 046
2000	NA	NA	1 165	0 098	1 995	NA	NA	NA	NA	NA	NA	0 039	0 707	0 024	0 722	0 000	0 000	NA	0 208	0 078	0 320	NA	NA	0 042	NA	NA	0 648
2001	NA	0 685	1 187	0 305	NA	0 710	0 000	NA	NA	0 342	0 373	0 143	0 548	0 396	0 536	0 000	0 081	NA	0 412	0 074	0 174	NA	NA	0 109	NA	NA	0 476
2002	0 567	0 172	0 658	0 343	0 513	NA	0 016	0 000	NA	0 230	0 414	0 292	0 748	0 379	0 528	0 000	0 000	NA	0 547	0 088	0 210	NA	NA	0 200	NA	NA	0 449
2003	0 561	0 116	0 756	0 302	1 030	0 124	0 000	0 000	NA	NA	0 661	0 307	0 620	0 332	0 640	0 000	0 000	NA	0 619	0 137	0 098	NA	NA	0 385	NA	NA	0 521
2004	NA	0 047	1 200	0 359	1 078	0 109	0 011	0 020	0 000	0 086	0 567	0 313	0 851	0 208	0 909	0 034	0 307	NA	0 317	0 107	0 808	NA	NA	1 392	NA	NA	0 607
2005	0 227	0 394	0 829	0 633	1 803	0 181	0 000	0 000	NA	0 115	0 830	0 530	1 022	0 373	0 837	0 056	0 428	NA	0 690	0 078	0 460	NA	NA	0 870	NA	NA	0 714

Stock Identifiers

CWF = COWLITZ FALL TULE
GAD = G ADAMS FALL FING
LRH = LOWER RIVER TULE
LRW = LEWIS RIVER WILD
RBT = ROBERTSON CREEK
SAM = SAMISH FALL FING
SPR = SPRING CREEK TULE
SPS = SO SOUND FALL FING
SRH = SALMON RIVER HATCHERY
SUM = COL RIVER SUMMERS
URB = COLUMBIA UPRIVER BRIGHT
UWA = U OF W FALL ACCEL
WSH = WILLAMETTE SPRING
CHI = CHILLAWACK

Table K.6. Total mortality exploitation rate indices by stock and age in the WCVI troll fishery, based on CWT data. Base period is 1979-1982.

TOTAL MORTALITY EXPLOITATION RATE INDEX																									
	CWF	GAD	GAD	LRH	LRH	LRW	RBT	RBT	RBT	SAM	SAM	SPR	SPR	SPS	SPS	SRH	SRH	SRH	SUM	URB	URB	UWA	UWA	WSH	CHI	CHI	
Year	Age 4	Age 3	Age 4	Age 3	Age 4	Age 4	Age 3	Age 4	Age 5	Age 3	Age 4	Age 3	Age 4	Age 3	Age 4	Age 3	Age 4	Age 5	Age 4	Age 3	Age 4	Age 3	Age 4	Age 4	Age 3	Age 4	Fishery
1979	NA	NA	NA	1 144	NA	NA	1 227	1 286	NA	NA	1 000	0 964	0 827	NA	1 116	NA	NA	NA	NA	1 376	1 685	0 692	1 179	1 251	NA	NA	1 050
1980	NA	NA	NA	0 570	0 823	NA	1 316	1 402	NA	NA	NA	1 123	1 340	NA	NA	1 000	NA	NA	0 687	1 326	0 968	1 304	0 828	1 276	NA	NA	0 993
1981	0 790	0 728	NA	1 109	0 818	0 852	0 679	0 580	1 000	NA	NA	0 900	0 655	0 756	NA	NA	1 000	NA	1 313	0 248	0 890	0 803	0 904	0 616	NA	NA	0 860
1982	1 210	1 272	1 000	1 177	1 359	1 148	0 778	0 731	NA	1 000	NA	1 012	1 178	1 244	0 884	NA	NA	NA	NA	1 050	0 457	1 201	1 089	0 857	NA	NA	1 089
1983	1 350	NA	1 383	1 556	1 697	0 973	0 353	0 660	2 396	NA	0 954	1 320	0 925	NA	0 645	0 609	0 708	NA	NA	0 357	0 429	0 647	0 957	0 185	NA	NA	1 085
1984	1 299	1 711	NA	1 945	2 799	NA	1 164	0 993	1 658	NA	NA	1 186	1 385	0 985	NA	NA	0 750	NA	NA	0 796	1 322	1 526	0 735	0 404	NA	NA	1 452
1985	0 895	NA	0 838	1 177	1 138	NA	0 540	0 000	NA	NA	NA	0 545	1 050	0 673	0 550	NA	NA	NA	NA	0 715	1 046	0 807	1 073	0 276	NA	NA	0 851
1986	1 255	NA	NA	1 070	1 132	0 441	NA	0 533	NA	NA	NA	1 102	0 877	0 718	1 138	NA	0 363	NA	NA	1 375	0 740	0 781	1 140	NA	NA	NA	1 003
1987	0 868	NA	NA	1 141	NA	1 432	0 269	NA	NA	NA	NA	0 426	NA	0 757	0 565	0 129	0 490	NA	0 000	1 134	1 032	0 369	0 413	NA	NA	NA	0 623
1988	0 900	0 481	NA	1 266	1 503	1 077	0 442	0 570	NA	0 625	NA	0 938	NA	0 335	0 774	NA	1 316	NA	1 122	0 523	2 054	NA	0 798	0 556	NA	NA	0 959
1989	0 540	0 358	0 499	0 307	0 610	0 573	0 171	0 329	0 000	0 308	0 621	0 589	0 400	0 331	0 364	0 175	NA	NA	0 753	NA	0 968	NA	NA	0 333	NA	NA	0 478
1990	0 744	1 061	0 940	1 104	0 473	1 216	0 654	0 560	1 491	0 422	0 865	0 880	0 740	0 844	0 906	0 358	0 873	NA	1 308	NA	1 689	NA	NA	0 530	NA	NA	0 874
1991	NA	NA	0 972	0 703	NA	0 748	0 607	0 554	0 709	0 376	0 597	0 581	0 649	0 489	0 670	0 429	0 737	NA	0 437	NA	NA	NA	NA	0 051	NA	NA	0 636
1992	1 143	NA	0 471	0 721	NA	0 326	1 860	2 487	5 041	0 845	0 278	0 478	0 761	0 662	0 775	0 685	5 349	NA	0 780	NA	NA	NA	NA	0 146	NA	NA	0 834
1993	NA	NA	NA	1 139	0 758	NA	1 393	2 271	2 393	1 028	0 449	0 568	1 017	0 965	0 614	0 686	2 469	NA	NA	0 887	2 024	NA	NA	0 274	NA	NA	0 913
1994	0 113	NA	NA	NA	NA	0 236	0 669	0 755	1 355	0 221	0 710	0 819	0 660	0 213	0 494	NA	0 774	NA	NA	NA	1 037	NA	NA	0 154	NA	NA	0 558
1995	NA	0 291	NA	NA	NA	0 466	NA	0 455	0 377	0 223	0 430	0 402	0 380	0 289	0 297	0 043	NA	NA	NA	NA	NA	NA	NA	0 104	NA	NA	0 349
1996	0 000	0 066	0 025	0 000	NA	NA	0 033	NA	NA	0 056	0 016	0 040	NA	0 058	0 023	0 026	0 023	NA	0 027	0 085	0 062	NA	NA	0 010	NA	NA	0 026
1997	0 326	NA	0 204	0 798	NA	NA	0 005	0 060	NA	0 074	0 241	0 552	0 501	0 111	0 312	0 008	0 069	NA	0 071	NA	0 089	NA	NA	0 000	NA	NA	0 327
1998	NA	NA	NA	NA	NA	NA	NA	0 000	NA	NA	0 084	0 038	0 000	0 000	0 032	0 000	0 000	NA	0 000	0 013	NA	NA	NA	0 019	NA	NA	0 027
1999	NA	0 046	NA	0 080	NA	NA	NA	NA	0 000	NA	0 074	0 013	NA	0 014	0 057	0 000	0 000	NA	0 026	0 000	0 000	NA	NA	0 000	NA	NA	0 041
2000	NA	NA	1 138	0 082	1 906	NA	NA	NA	NA	NA	NA	0 032	0 656	0 026	0 697	0 000	0 000	NA	0 200	0 065	0 302	NA	NA	0 034	NA	NA	0 595
2001	NA	0 522	1 137	0 258	NA	0 671	0 000	NA	NA	0 265	0 357	0 120	0 509	0 324	0 512	0 000	0 069	NA	0 395	0 061	0 164	NA	NA	0 091	NA	NA	0 427
2002	0 549	0 141	0 637	0 292	0 490	NA	0 013	0 000	NA	0 188	0 402	0 246	0 706	0 313	0 508	0 000	0 000	NA	0 525	0 073	0 199	NA	NA	0 169	NA	NA	0 411
2003	0 536	0 086	0 739	0 258	0 971	0 117	0 000	0 000	NA	NA	0 646	0 259	0 585	0 275	0 615	0 000	0 000	NA	0 593	0 113	0 101	NA	NA	0 322	NA	NA	0 480
2004	NA	0 047	1 170	0 306	1 016	0 103	0 009	0 019	0 000	0 088	0 542	0 265	0 802	0 174	0 875	0 030	0 263	NA	0 305	0 088	0 782	NA	NA	1 166	NA	NA	0 555
2005	0 212	0 300	0 811	0 528	1 702	0 171	0 000	0 000	NA	0 088	0 808	0 449	0 966	0 303	0 802	0 049	0 367	NA	0 663	0 065	0 442	NA	NA	0 730	NA	NA	0 653

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